

Fill out the Personal Growth Chapter

Write down your personal information

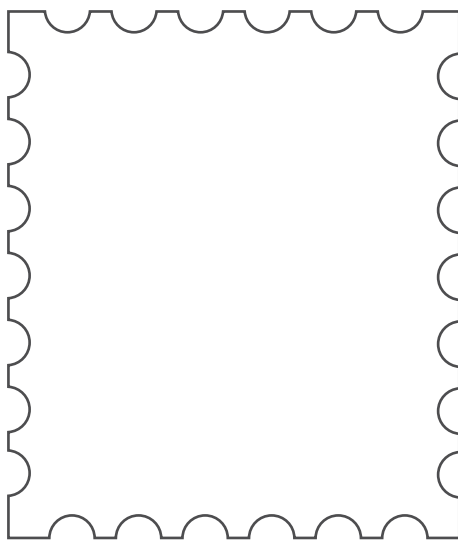
My name is
.....
.....
I was born on
.....

I live at
.....
.....

Contact me
on
.....
.....

for _____ years

I've belonged
to PF Club
.....



Place your picture
or draw your portret

I go to school at
.....

My instructor is
.....
His/Her phone #
.....

I am in grade
.....

I have
completed
COMPANION
class

I was inducted to the
PF Club on
.....

Memorize Pathfinders Pledge

The Pathfinder Pledge & Law is an important part of Pathfinders. Thousands of Pathfinders each year learn and choose to abide by the requirements of the Pathfinder Pledge and Law for the sole purpose of growing closer to their fellow men and women, and to their Creator.

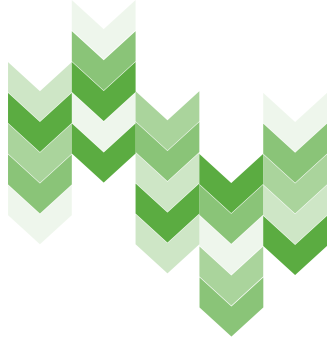
Pathfinders Pledge

By the grace of God,
I will be pure, and kind, and true.
I will keep the Pathfinder Law. I will be
a servant of God
and a friend to man.

Pathfinders Law

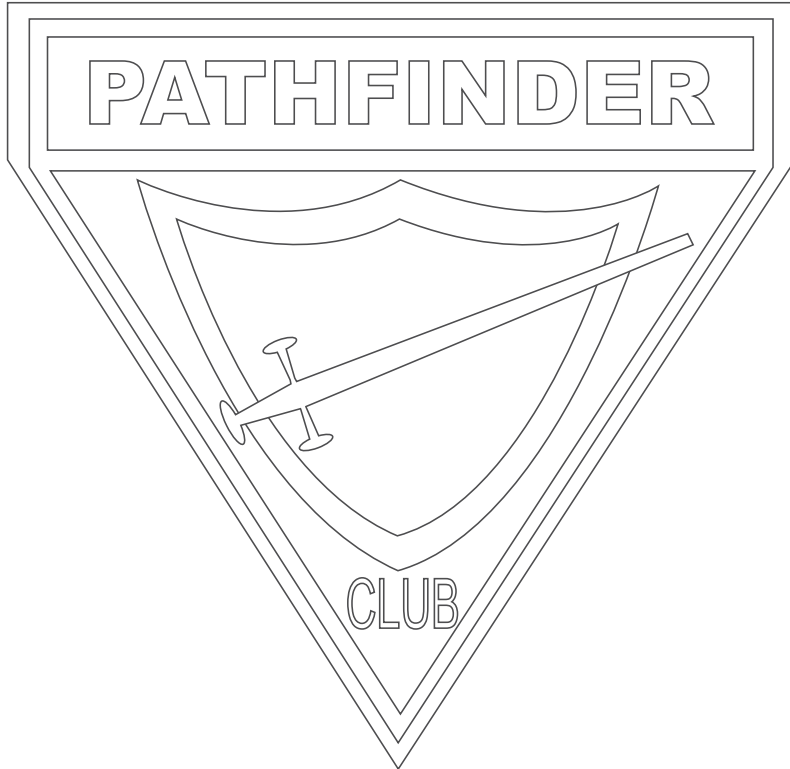
The Law is for me to:
Keep the morning watch
Do my honest part
Care for my body,
Keep a level eye
Be courteous and obedient
Walk softly in the sanctuary,
Keep a song in my heart,
Go on God's errand.

Illustrate your understanding of the Pathfinder Pledge in an interesting way



Learn the meaning of the Pathfinder Emblem.

Color the picture



Colors:

Red

Golden

White

Shapes:

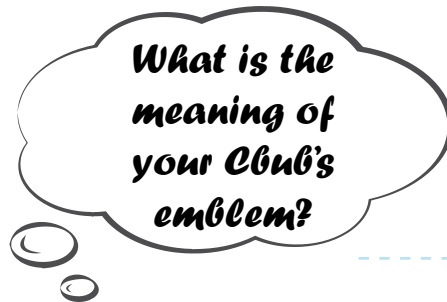
Sword

Shield

Triangle

Handwriting practice lines consisting of dashed blue lines for the text and solid blue lines for the baseline.

Draw the emblem of your Club



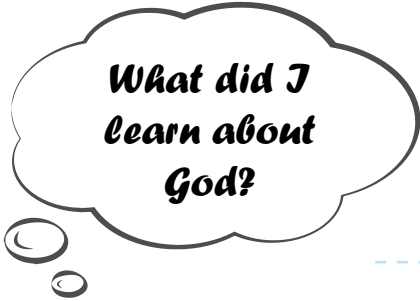
Handwriting practice lines consisting of dashed blue lines for the text and solid blue lines for the baseline.

Develop your devotional life.

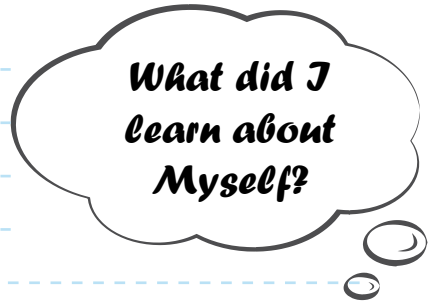
Study the Weekly Devotional Guide (weeks 27 – 39) p.

Develop your devotional life.

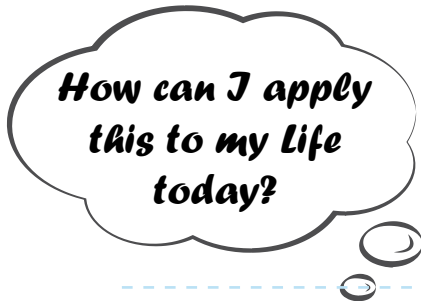
Study the book of Acts utilizing printed or electronic resources. p.



*What did I
learn about
God?*



*What did I
learn about
Myself?*



*How can I apply
this to my life
today?*

Memorize a Bible text

(not previously learned) for the following subjects:

PRAYER

- Psalms 5:3
- Psalms 51:3
- option _____

DOCTRINE

- Acts 1:9-11
- Ecclesiastes 12:13-14
- 1 Corinthians 6:19, 20
- option _____

BEHAVIOR

- Colossians 3:23
- Proverbs 22:29
- Philippians 4:8
- John 3:19
- 1 Corinthians 2:14
- option _____

SALVATION

- Matthew 16:24-27
- Luke 14:28, 33
- Proverbs 28:13
- 1 Timothy 1:15
- John 3:16-18
- option _____

RELATIONSHIPS

- John 13:34, 35
- Proverbs 19:19
- John 15:13
- Romans 14:11
- 1 John 1:28
- option _____

PROMISES/PRAISE

- Proverbs 3:5, 6
- Psalm 91
- 1 Corinthians 10:13
- 2 Timothy 4:7, 8
- James 4:7
- option _____

GREAT PASSAGES

- 1 Peter 1:24, 25
- 1 Kings 18:21
- Matthew 24:37-39
- option _____

What is a Bible concordance, and how to use it?

A Bible concordance can be a helpful tool for studying the Bible. It contains an alphabetical index of words used in the Bible and the main Bible references where the word occurs.

- A concordance is a helpful tool when doing a word study. Using an exhaustive concordance, you can locate every occurrence of the word in the Bible and gain helpful insight into what it means.
- A concordance is helpful in learning the definitions of Greek, Hebrew, or Aramaic words.
- A concordance is helpful when trying to locate a Bible verse, but you can't remember the chapter and verse. If you can remember just one word in a verse, you can often find what you're looking for.

English concordance

The earliest concordances in English were published in the middle of the sixteenth century, the first by **Thomas Gybson** in 1535 (for the New Testament only).

The three major concordances are: of Robert Young, James Strong, and Walker.

Young's Analytical Concordance to the Bible (Edinburgh, 1879–84), an almost complete concordance, indicates the Hebrew, Chaldaic, or Greek original of the English word, and distinguishes the various meanings that

may underlie the same word.

Strong's Concordance has reference only to the English text. It contains also a comparative concordance between the Authorized and Revised English versions, useful for a study of the changes introduced.

Walker's Comprehensive Concordance to the Holy Scriptures (Boston, 1894) is almost as complete as Strong's

Contemporary use

Since software has made the Bible available in electronic form and

with thorough electronic indexes, hard-copy printed concordances have less application. Most scholars and Bible students rely instead on software.

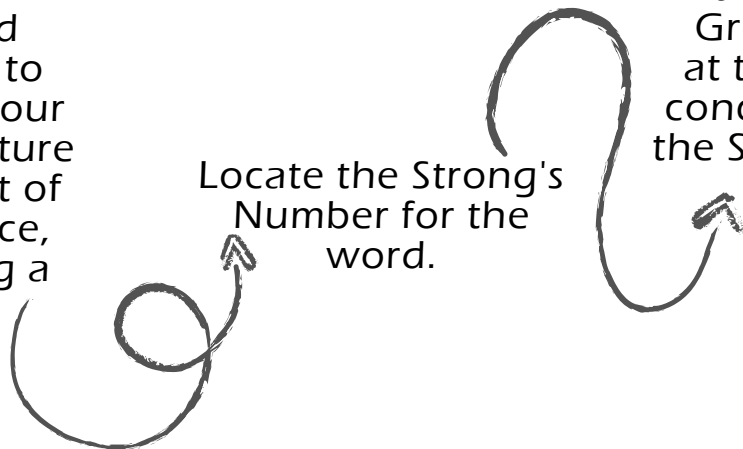
Several Bible concordances are found online and are available to use free of charge.

How to use concordance

Find the word that you want to research from your passage of scripture in the front part of the concordance, much like using a dictionary.

Locate the Strong's Number for the word.

Find the word in the Hebrew or Greek dictionary at the back of the concordance, using the Strong's number.



Why is it important to look up words that I already understand?

Some words in the original languages have meanings and subtleties that could not be expressed in equivalent English words.



Learn how to use a Bible concordance by selecting two topics and/or words to discover how it is used in the Bible.

1: _____
How is it used?

2: _____
How is it used?

Learn about eight missionaries

To at least four continents, who served during the Seventh-day Adventist mission expansion (1900 to 1950).

1. _____

1. _____

1. _____

1. _____

1. _____

1. _____

1. _____

1. _____





On a world map, plot the country of service for each missionary.



Make a presentation about your favorite missionary.





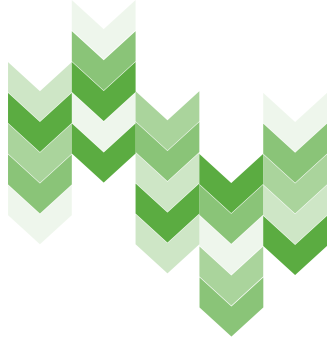
Compare the expansion of the early Christian church in the book of Acts to the missionary expansion of the Seventh-day Adventist Church up to 1950.

Early Christian church



The Seventh-day Adventist Church up to 1950





Role-play the experience of a person of the New Testament Church in the book of Acts.

- Paul Peter Ananias Cornelius

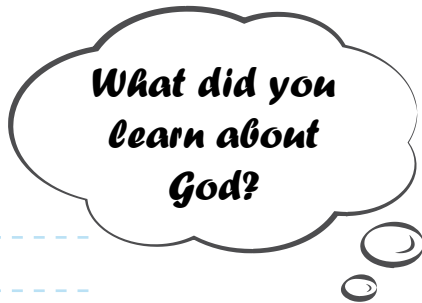
Write down and describe personal qualities of chosen character

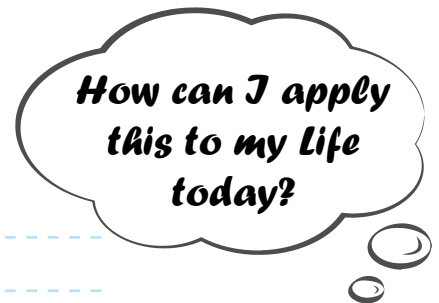
Strengths

Weaknesses

.....
.....
.....
.....
.....
.....

.....
.....
.....
.....
.....
.....







Discuss and study one of the following life issues with your Explorer group and an adult:

Reading

Abuse

TV & Movie
Theaters



Make a personal visit to a sick person or shut-in and follow up with a phone call, letter, card, email, or text message.



.....

.....

.....

.....

.....

.....

.....

.....

.....

.....



.....

.....

.....

.....

.....

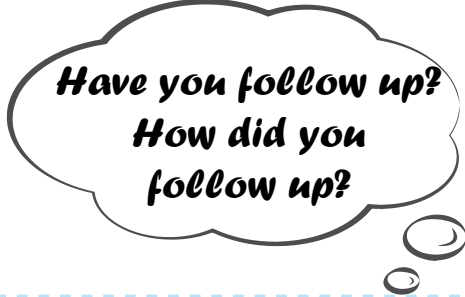
.....

.....

.....

.....

.....



.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

Be familiar with the community services in your area and give assistance for at least four hours.



How I helped

Hours

How I helped	Hours
----- ----- ----- ----- -----	----- ----- ----- ----- -----

Participate in at least two church programs for a total of four hours.

How I helped

Hours

How I helped	Hours
----- ----- ----- ----- -----	----- ----- ----- ----- -----



Participate in a panel discussion or skit on peer pressure and its role in your decision making.

Did you participate in a panel or a skit? What happened?

Handwriting practice lines (dashed blue lines) for the first question.

What are the reasons for peer pressure?

How can you handle them?

Handwriting practice lines (dashed blue lines) for the second and third questions.

What well-balanced combination of strengths did Jesus develop as a youth?



52 And Jesus increased in wisdom and stature, and in favor with God and men.

Luke 2:52

NKJV, Pathfinder Edition

What wellbalanced combination of strengths did Jesus develop as a youth?

Why is daily grooming my Christian character important?

How does belonging to Christ change the way I should dress and act?



According to Psalm 8 what estimate does God place on your personal worth?

- Who is Man

God have made him

made him a little lower than the angels

crowned him with glory and honor

- What did God do for His creatures?

put everything under their feet

God made them rulers over the works of His hands

Are names important to God? Does He know your name? (Isaiah 43:1, Exodus 33:17, Isaiah 45:4)

1 But now, this is what the Lord says – he who created you, Jacob, he who formed you, Israel: “Do not fear, for I have redeemed you; I have summoned you by name; you are mine.”

Isiah 43:1

17 And the Lord said to Moses, “I will do the very thing you have asked, because I am pleased with you and I know you by name.”

Exodus 33:17

4 For the sake of Jacob my servant, of Israel my chosen, I summon you by name and bestow on you a title of honor, though you do not acknowledge me.

Isiah 45:4



If you want to use your gift of speech to God's glory, what should your prayer be? (Psalm 19:14)

May these words of my mouth and this meditation of my heart

be pleasing in your sight,

Lord, my Rock and my Redeemer.

List ten principles to help you overcome self-consciousness and social embarrassment.

- 1.
- 2.
- 3.
- 4.
- 5.

- 6.
- 7.
- 8.
- 9.
- 10.



Discuss scriptural guidelines that will help you cope with your sexuality and keep your thoughts-life clean. Discuss intelligently the “dos and don’ts” of dating.

What are scriptural guidelines that will help me cope with my sexuality?

Warnings

What are the “dos and dont’s” of dating?

“Dos”

“Dont’s”

Know the rules of table etiquette which make it easier for you and those around you, such as what to do with your knife and fork after using them. Know how to be a welcome dinner guest and a joy to your hostess.



What are the rules of table etiquette and how do they make it easier for you and those around you.

Handwriting practice lines consisting of ten horizontal dashed lines.



What your plate signals



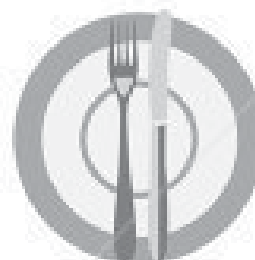
Pause



Ready for second plate



Excellent



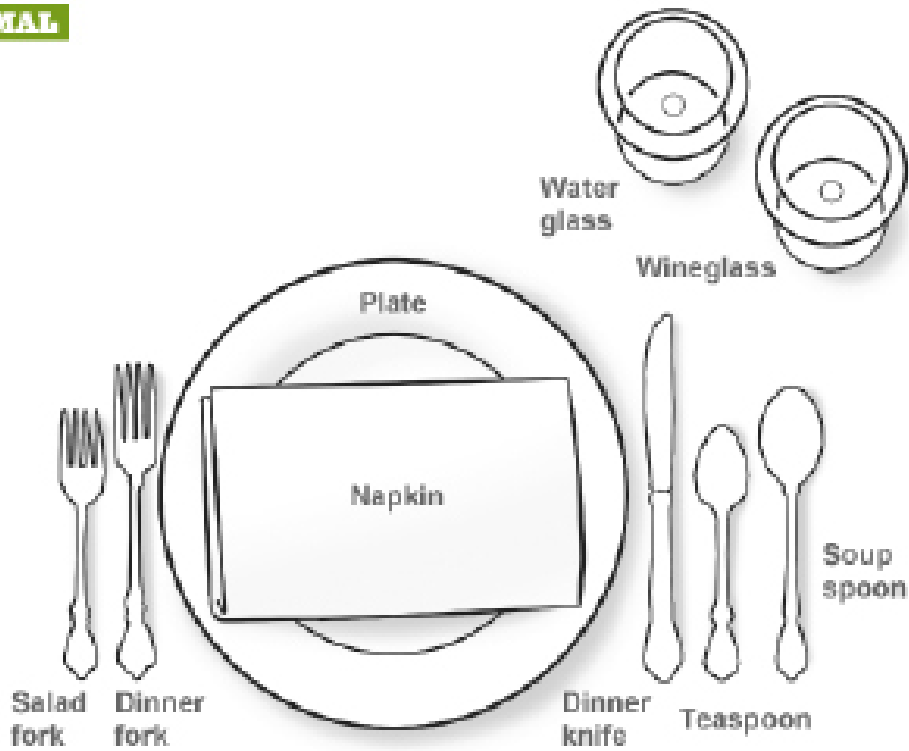
Finished



Don't like

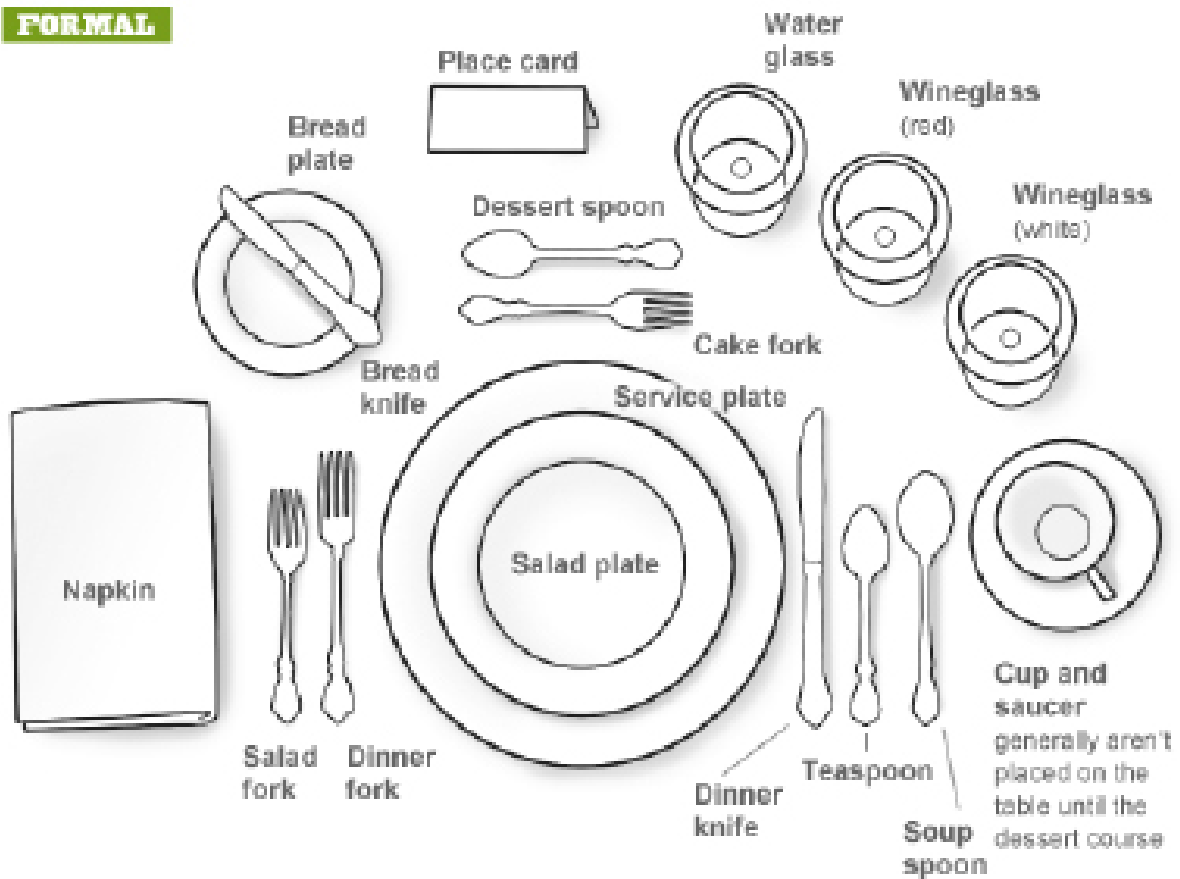


INFORMAL



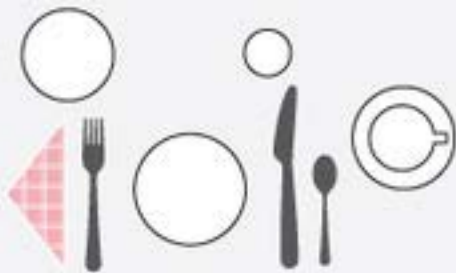
Utensils are placed one inch from the edge of the table

FORMAL





THE PROPER WAY TO SET A TABLE



Breakfast



Lunch



Dinner



European



Formal



Banquet or Brunch

© daniellemj



10 Table Manners for Kids



Napkin in your lap

Elbows off the table and sit up tall



Chew with your mouth closed

Food to mouth, not mouth to food



Use your pleases and thank yous

Wait your turn to talk



Use your indoor voice

Don't complain about the food



Take "just right" bites

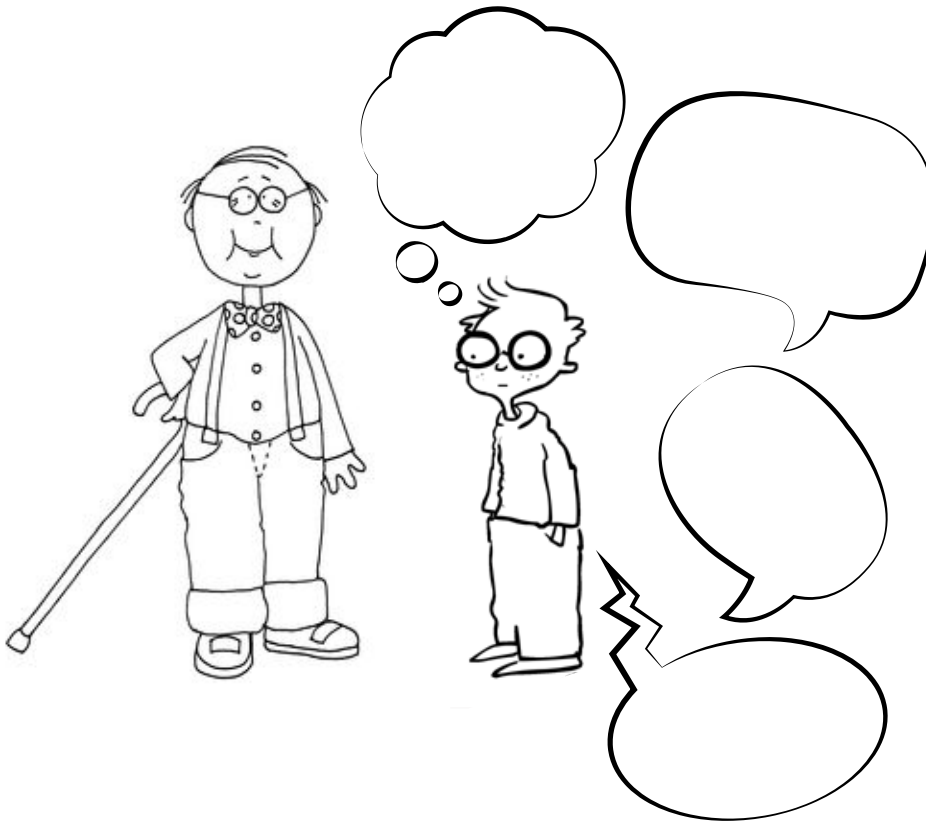
Take up your dishes when finished eating



Demonstrate or discuss proper conversational skills



The proper way to talk to older people in public

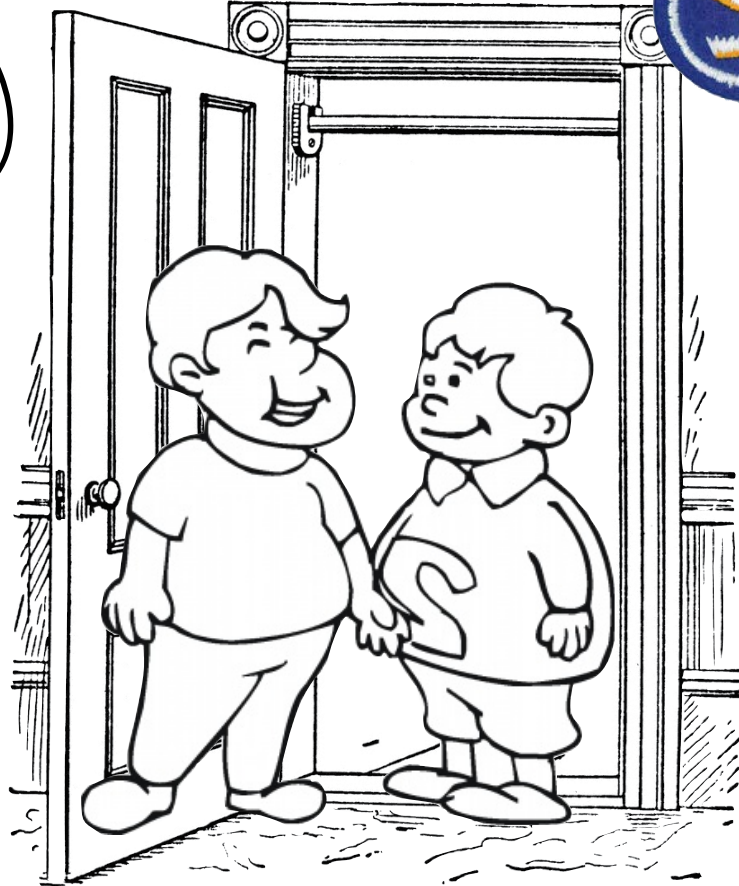


How to address people and make proper introductions

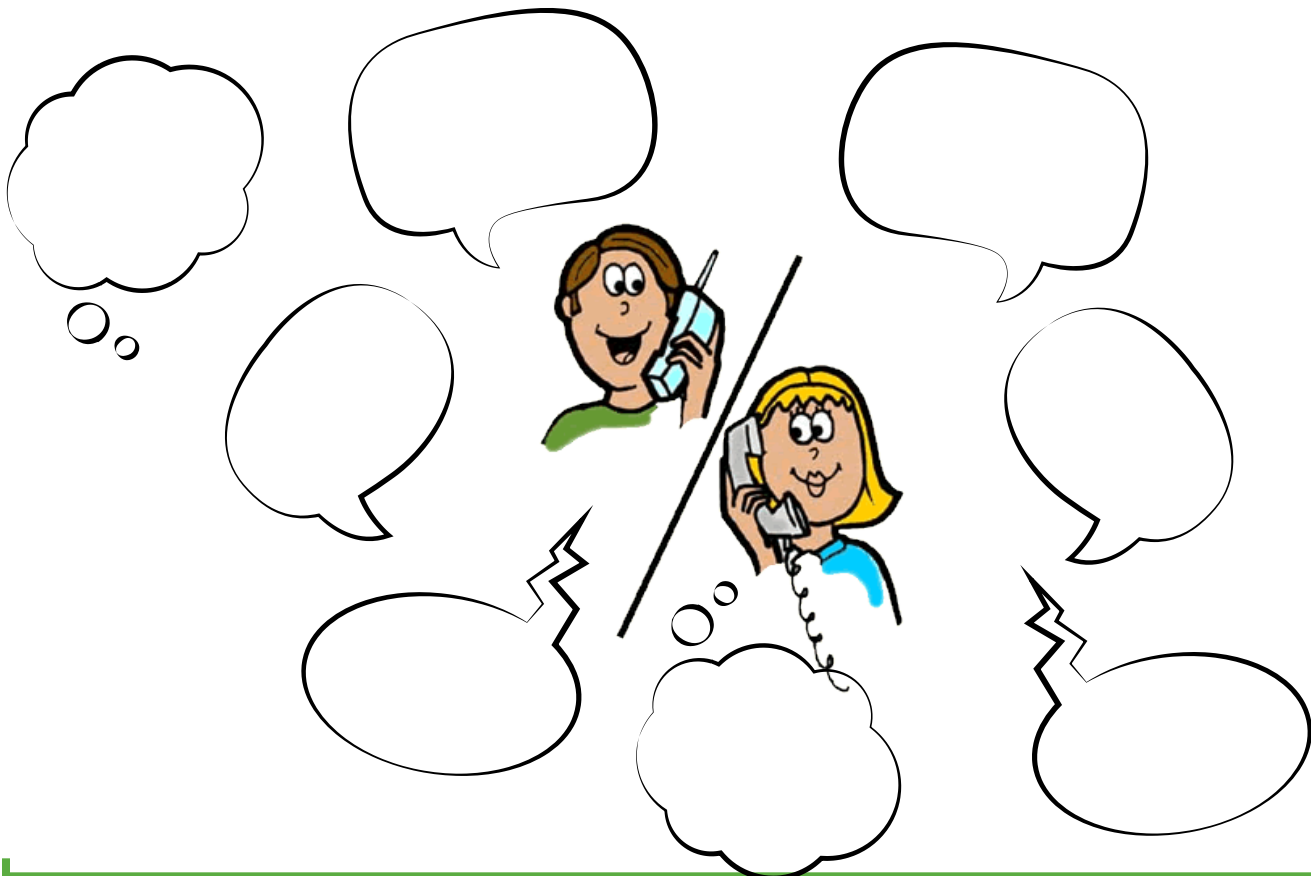




What to say when you answer the door



How to answer the telephone correctly

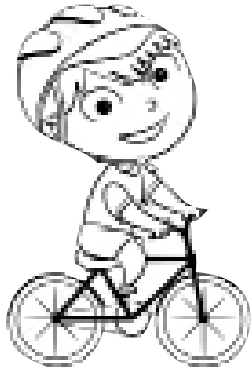


How to show concern for the feelings of others





Give two reasons why physical fitness is important. Explain the relationship between proper diet, exercise, and weight control.

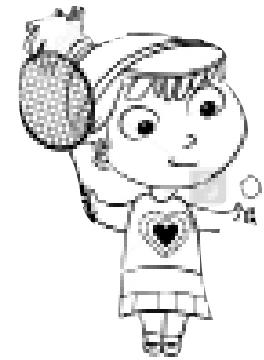


Bicycle

- 1. _____
- 2. _____

Exercises

- 1. _____
- 2. _____



Runners

- 1. _____
- 2. _____

Gym

- 1. _____
- 2. _____



Swimming

- 1. _____
- 2. _____

Tell the importance of proper grooming, including bathing, body hygiene, breath, proper care of clothes, shoes, etc.





Describe the proper way to wash your hair and care for your "hair tools."

Describe the proper care for your hands and fingernails.



List four reasons why your face is important to you, and show how the way you exercise and sleep can improve your facial appearance.

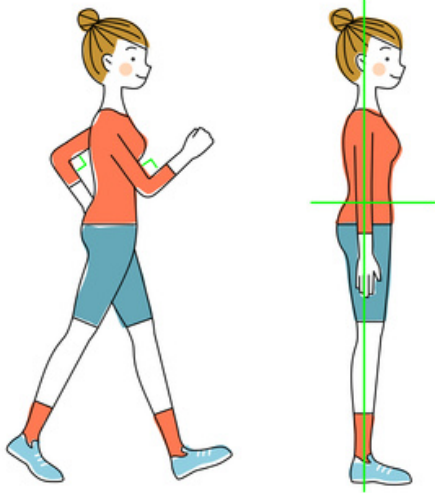
Sleep



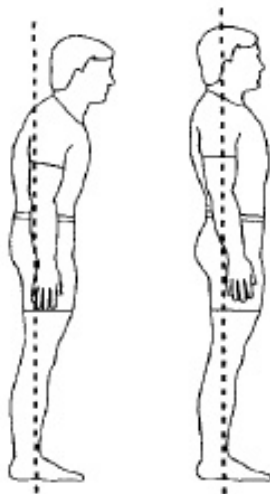
Exercises



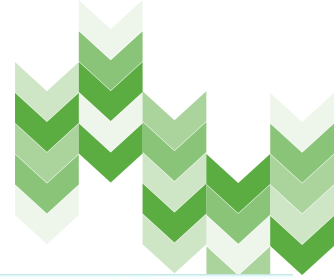
List seven points showing the power of correct posture.



Handwriting practice lines consisting of ten horizontal dashed lines for writing.



Handwriting practice lines consisting of ten horizontal dashed lines for writing.



Know how to choose a hairstyle that makes you look your best.

What Hairstyle Suits Your Face Shape?

face shape

OVAL

The length is 1 1/2 times the width

Forehead slightly wider than chin

Pointed jawline

Flattering:
A-Line Bob, Long Wavy Hairstyle, Shoulder-Length Flip

Avoid:
NOTHING

Equal width and height

Forehead approximately equals jaw in length

Strong jawline and square chin

SQUARE

Flattering:
Long Layered Hairstyle With Side Bangs, Long Waves, A-Line Chin Length Bob

Avoid:
Pixie With Blunt Bangs, Sleek Ponytail, Jaw-Length Blunt Bob

The prevalence of length over width is evident

Wide forehead and cheekbones

Relatively narrow jaw and pointy chin

HEART

Flattering:
Curly Hairstyle With Side Bangs, Medium Hairstyle With Ricks, Curly Side Pony

Avoid:
Voluminous Pixie, Low Pony With Blunt Bangs, Extra Short Voluminous Bob

Chubby cheeks

The length and the width are about equal

Round and full jawline

ROUND

Flattering:
Lob With A Side Part, Side Wavy Pony, Long Layered Hairstyle

Avoid:
Bob With Blunt Bangs, Flat Looking Pixie, Medium Voluminous Curls

Narrow thin face without angles

The prevalence of length over width is evident

LONG

Flattering:
Long Voluminous Curls With Arched Bangs, Medium Bouncy Curls With Blunt Bangs, Medium Flip Out Hairstyle

Avoid:
Long Straight Hair With Side Bangs, Voluminous Top Knot Bun, Half Up Beehive Hairstyle

Narrowed hairline

Your cheekbones are the widest part of your face

Your face is slightly longer than it is wide

Pointy chin

DIAMOND

Flattering:
Medium Layered Hairstyle, Angled Pixie, Layered Lob

Avoid:
Edgy Voluminous Pixie, Updo With Big Bouffant, Voluminous Short Hairstyle





Heart-Shaped Face

You have a wider forehead and a jawline that tapers to a narrow, almost pointy chin



Oval Face

Your face is symmetrical and is considered to be the perfect shape. Lucky you!



Long Face

Your face appears to be longer than it is wide, and tends to have a prominent chin



Square Face

Your face is strong and broad, with a wide, angular jaw and square chin



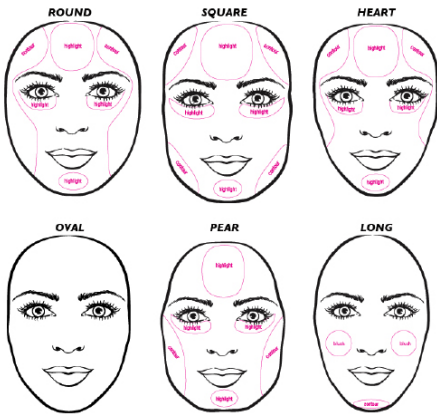
Triangular Face

Your forehead, cheeks and the eye area tends to be narrower than the jaw



Round Face

Round faces usually feature softly rounded foreheads and chins, with full cheeks



Round faces
Elongate round faces with deeper and wider collars

SUITABLE STYLES

Sweetheart Empire V neck Queen Anne

Angular face
Offset the strong jawline with sweeping collars

SUITABLE STYLES

Deep Sabrina Sweetheart Cowl neck Scoop

Long face
Necklines that end close to the neck widen your face

SUITABLE STYLES

Boat neck Cowl neck Sabrina Portrait

The best **HAT** for your **FACE SHAPE**

2013 hat trends

	○ OVAL long, narrow	● ROUND short, circular	■ SQUARE angular jaw	♥ HEART narrow jaw
floppy hat	○	○	○	○
boater hat	○	○	○	○
fedora	○	○	○	○
baseball cap	○	○	○	○
bernie	○	○	○	○
cossack	○	○	○	○

Choose a hat color that contrasts your hair (dark with blonde, light with brunette) and complements your complexion.

Consider high-low collars, dresses and baseball caps, beanies and blazers, cossacks and denim.

The best **HAT** for your **FACE SHAPE**

	oval	round	square	heart
wide brimmed hat	✓	✓	✓	✓
floppy hat	✓	✓	✓	✓
fedora	✗	✓	✓	✗
beret	✓	✗	✓	✓
boater hat	✓	✗	✗	✓

www.thetwofortwo.com

Tell the proper style of clothes to wear if you are tall, plump, short, or thin or have a heavy hipline or full bosom.



Determine what type shape your body is. Pay attention to your curves. Look at how they connect your bust, waist, and hips.



- The body types as describes below describe women's bodies, not a girl who has not gone through puberty. Although it is sometimes possible to determine body type prior to maturity, it is only after growing a bust, hips, and so on that it will become evident.
- Measure the sizes of your bust, waist, and hip. Depending on the size of each part (in inches), you can determine which shape your body is to find clothes that properly fit
- There is no "best" or "worst" body type. A certain type may be fashionable in your particular locale, at this period in time, but this does not mean your body type is "bad".
- All body types have pros and cons. Knowing your body type is about dressing to look your best.
- Even model's bodies fall into one of these categories.



hourglass

Your waist measurement is smaller than your bust and hips by 4" or more.

- DO:**
- Clothes fitted at waist
 - Show skin; v-necks
 - Wear fabrics that drape smooth

- DON'T:**
- Oversized clothes
 - Anything with no waist
 - Items that end at your fullest points



pear

Your hips are 4" or more larger than your waist, and your bust and waist do not differ significantly.

- DO:**
- Dark colored bottoms
 - Bright colors and prints on top
 - Lower-waist bottoms

- DON'T:**
- Oversized tops
 - Anything with no waist
 - Items that end at your fullest points



apple

You are less than 5'3" tall and your waist measures 2" more than your bust and hips.

- DO:**
- Tailored paired with soft
 - Illusion of shape
 - Cowl necklines

- DON'T:**
- Items that are too tight
 - Wide at waist
 - Anything cropped

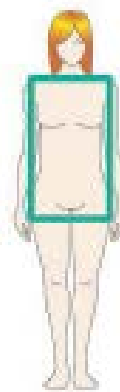


pencil

Your waist, hips and bust don't differ in measurement by more than 2".

- DO:**
- Feminine details
 - Fitted tops & jackets
 - Push-up bras

- DON'T:**
- Very masculine styles
 - Loose, baggy tops
 - Stiff fabrics



strawberry

Your bust measurement is 3" or more greater than your hip and waist measurements.

- DO:**
- Dark tops, light bottoms
 - Uncomplicated tops
 - V-necks

- DON'T:**
- Puffy sleeves
 - Baggy, bulky tops
 - Large lapels and collars

Tell how to have well-groomed hair and how to choose a hairstyle that makes you look your best.



HAIR - MEN

A PRIMER ON MEN'S HAIRSTYLES

OVAL FACE SHAPE

1. Characterized by broad forehead and rounded jaw and chin.
2. Allows variety of hairstyles with different styles and lengths because of the balanced proportions.
3. Recommended hairstyles:

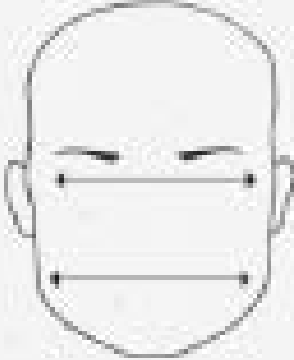

Pushed back long, Side-parted short, Fringe (aka bangs) up, Undercut

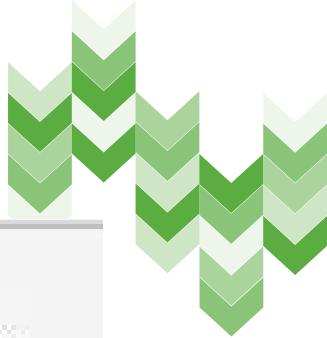



SQUARE FACE SHAPE

1. Square proportions with straight sides and wide jaw.
2. Short, light, sharp and masculine haircut goes well with this type.
3. Recommended hairstyles:

Undercut, Slicked back side part, Crew (aka buzz) cut, Flat-top

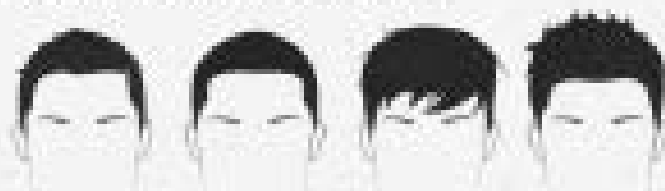



OBLONG FACE SHAPE

1. This type has a longer chin and gives an illusion of a narrow face.
2. Allow the hair to fall onto the face to reduce the appearance of a longer face.
3. Keep the shape well balanced with neither too short on the sides nor too long on the top.
4. Recommended hairstyles:

Side parted, Buzz cut, Side Fringe and Fringe up.



ROUND FACE SHAPE

1. This type of face has broader proportions with the face almost as wide as tall.
2. Choose hairstyles with a lot of length and volume on the top to add some height to the face.
3. Avoid hair coming onto the face as it will make it look rounder.
4. Recommended hairstyles:

Undercut, Flat back with shorter sides, Quiff and Fringe up.



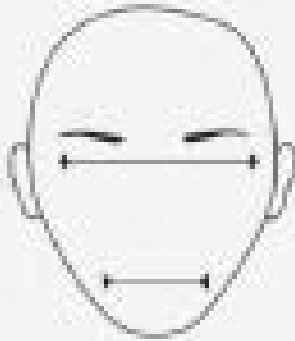
TRIANGULAR FACE SHAPE

1. These faces have narrow forehead and wide jaw.
2. Opt for hairstyles that add volume and width to the forehead, avoid too short on the sides.
3. Recommended hairstyles:

Fringe up, Side parted and side fringe or bangs.



DIAMOND FACE SHAPE



- 1. This type of faces have narrow chin and forehead but prominent cheekbones (think Benedict Cumberbatch).
- 2. Longer hair generally go well with the face type.
- 3. Alternatively you can add volume by going for a fringe or layered cut. Avoid getting sides too tight.
- 4. Recommended hairstyles:

Long hair pushed back, Quiff, Flat hair, Side fringe



HEART FACE SHAPE

- 1. Heart shaped faces are wider at the forehead with narrow pointed chin.
- 2. Generally longer hairstyle is well suited as short hair will only accentuate the wider forehead.
- 3. Recommended hairstyles:

Pushed back, Side parted long, Long fringe and undercut.





Determine your body shape.

For men, body shape is based more on the length of your torso and your ability to gain muscle on your chest and shoulder area.

There are five main body shapes for men:

The trapezoid body shape:

You have broad shoulders and a broad chest with narrow waist and hips. Because your upper body and lower body will be pretty proportional, you can fit most styles and fits.

The inverted trapezoid body shape:

You have broad shoulders and chest, but your hips and waist are narrower. So your upper torso is much wider than your lower torso, and the lower half of your body. This body shape is common in athletes and men who regularly weight lift or do body building.

The rectangle body shape:

You have shoulders that are the same width as your waist and hips. So, when dressing, your aim should be to widen your shoulders and make your lower torso appear more narrow.

The triangle body shape:

Your chest and shoulders are narrower than your waist and hips, and you appear larger on the bottom half of your torso. So the lower half of your body may appear wider than your upper body.

The oval body shape:

Your chest and stomach will create a long oval shape. You may also have narrow looking shoulders and skinnier legs.

The Best Jeans For Your Body Type
Presented By: Real Men Real Style

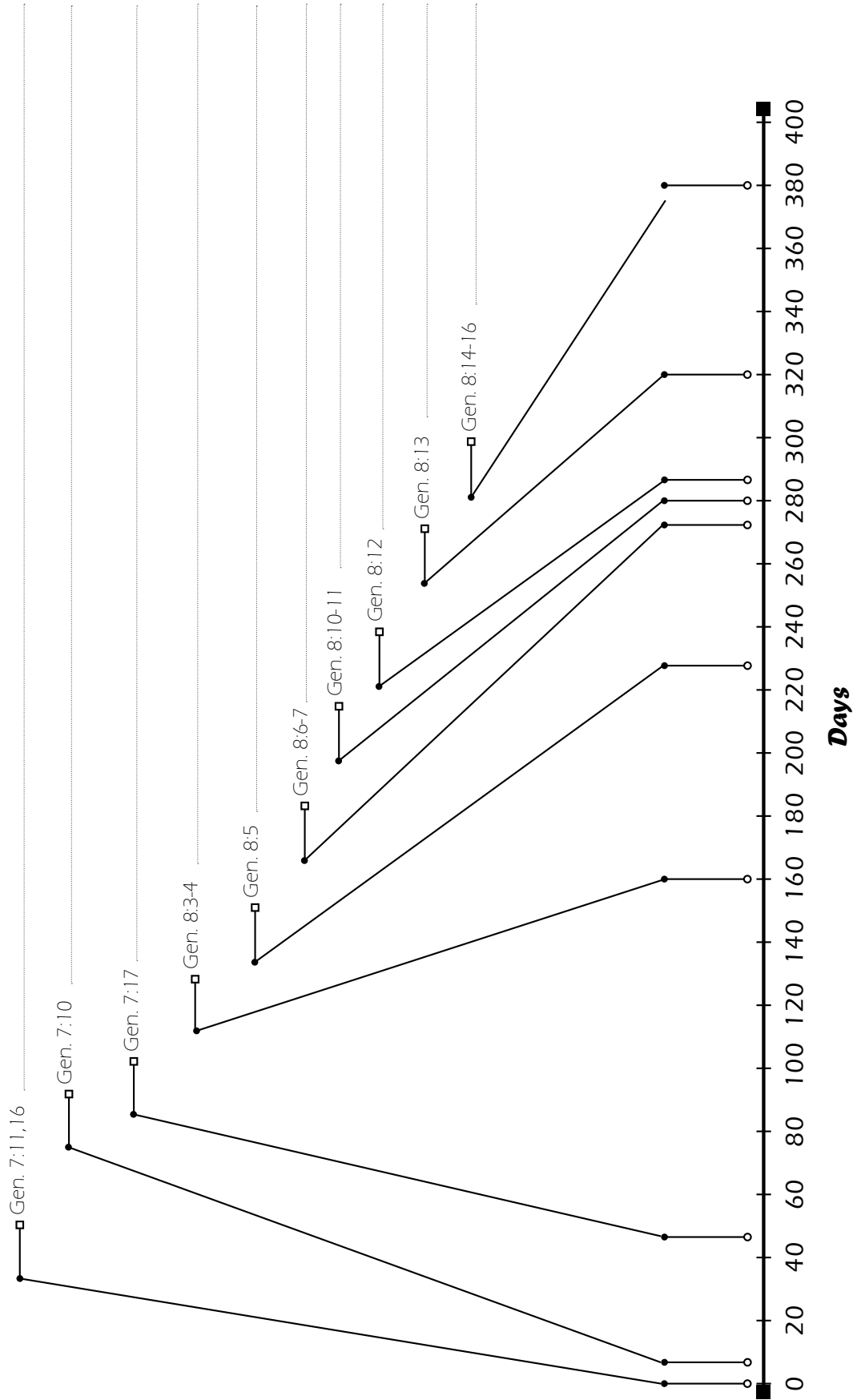
	Thin	Muscular	Large Waist
Thin	✗	✓	✓
Muscular	✗	✗	✓
Large Waist	✗	✗	✗

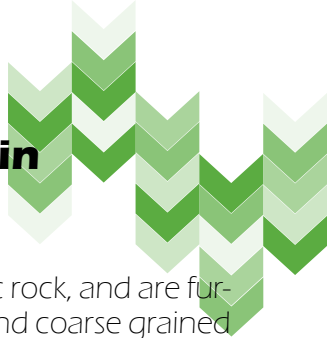
RMRS



Review the genesis account of the flood.

Timeline of the Flood





Study at least three different fossils: explain their origin and relate them to breaking God’s law.

Fossils

Fossils are the mineralized or otherwise preserved remains or traces (such as footprints) of animals, plants, and other organisms.

Fossils are generally found in sedimentary rock with differentiated strata representing a succession of deposited material.

The occurrence of fossil bearing material depends on environmental factors before and after the time of preservation. After death, the first preserving factor is a rapid burial in water bodies or terrestrial sediment which would help in preserving the specimen. These

rocks types are usually termed clastic rock, and are further subdivided into fine, medium and coarse grained material. While fossils can be found in all grain types, more detailed specimens are found in the fine grained material. A second type of burial is in rocks composed of calcium carbonate (limestone) or carbon (coal). The third type of fossil bearing rocks is called chemical rock. Examples include rock salt and phosphate concentrations. The remains of gastropods, algae, vertebrates, and trace fossils are often found in these rocks.

Fossil 1

.....

.....

.....

Origin

.....

.....

.....

Fossil 2

.....

.....

.....

Origin

.....

.....

.....

Fossil 3

.....

.....

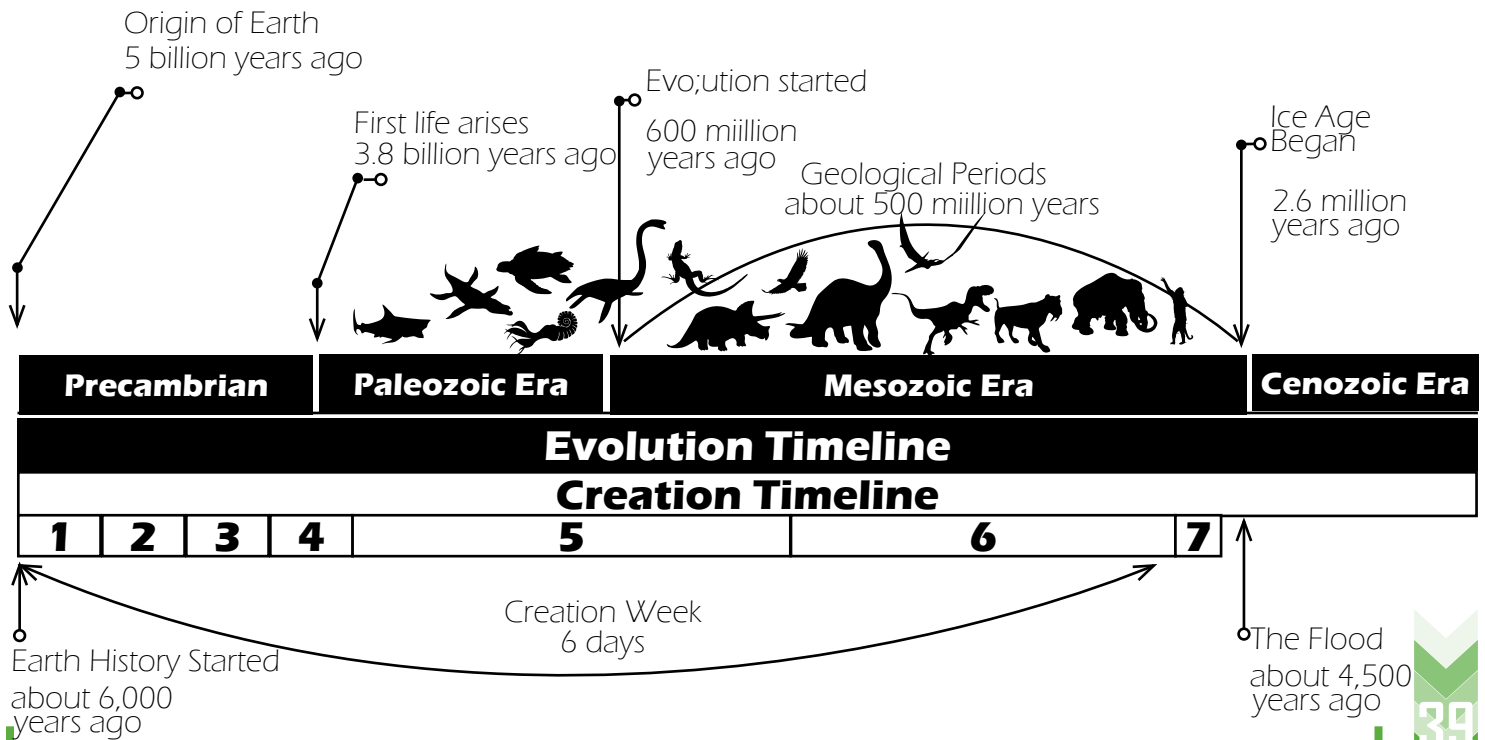
.....

Origin

.....

.....

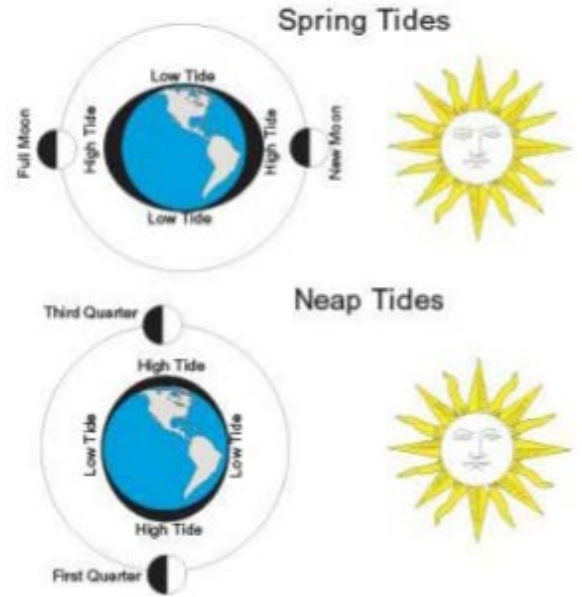
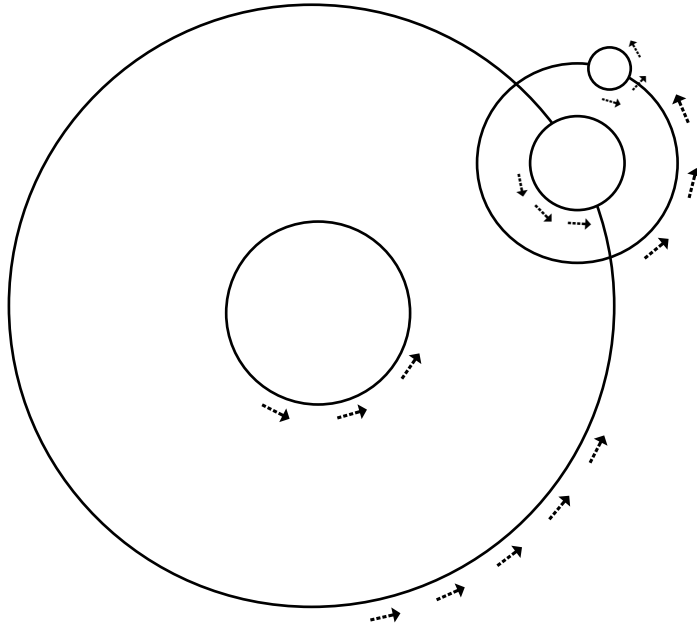
.....



Make a diagram showing relative positions and movements of the earth, sun, and moon.



What governs the tides?



What is the earth's nearest celestial neighbor? What is its distance from the earth? _____

What is the morning star and evening star? Why does it carry both names? Observe the morning and evening star in the sky.

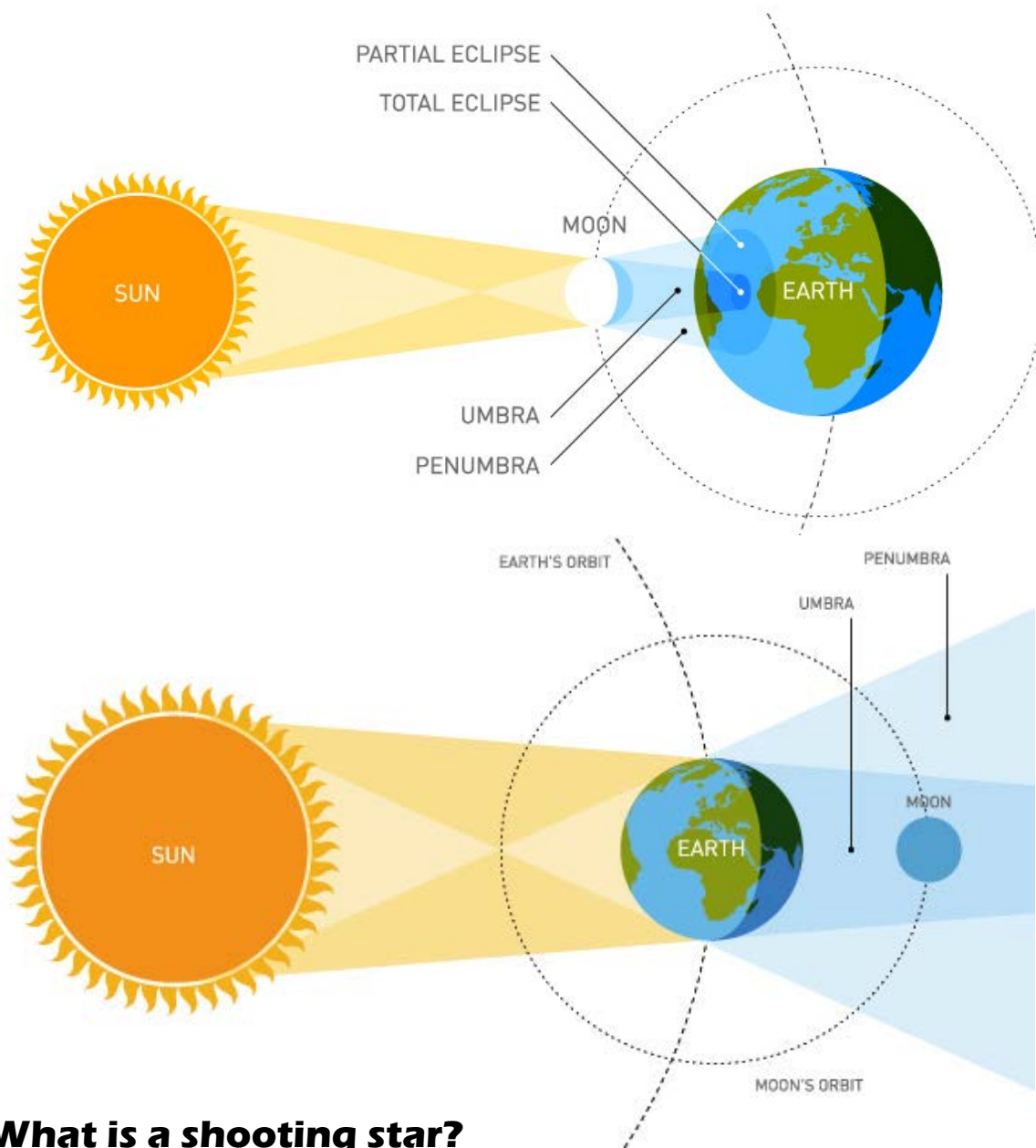
Explain zenith and nadir.

Handwriting practice lines consisting of multiple horizontal dashed lines for writing answers.



What causes an eclipse?

Show positions and area events for eclipses of the sun and moon.



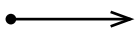
What is a shooting star?



How fast does light travel? How far does light travel in a year?



To Moon



1.3 light sec



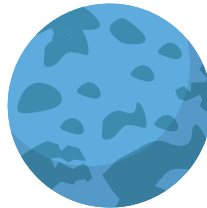
To Sun



8.3 light min



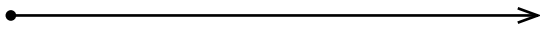
To Alpha Centauri



4.4 light years



To Andromeda Galaxy



2.5 million light years

What is the Milky Way? Observe the Milky Way in the night sky.

.....

.....

.....

.....

.....

.....

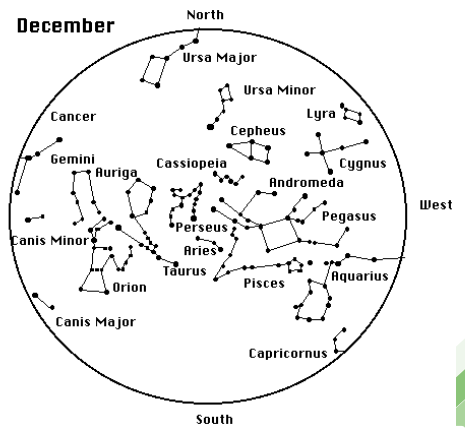
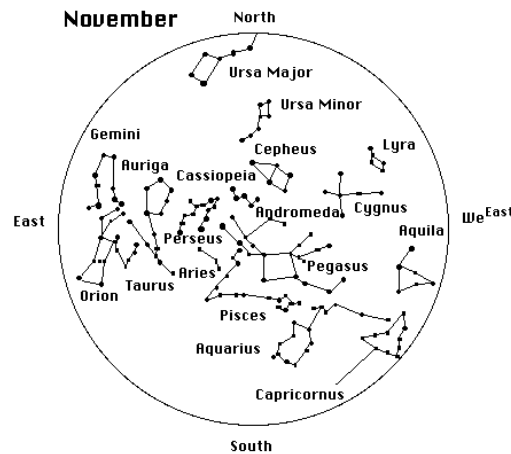
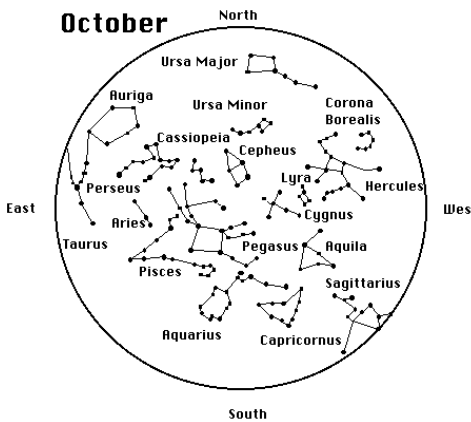
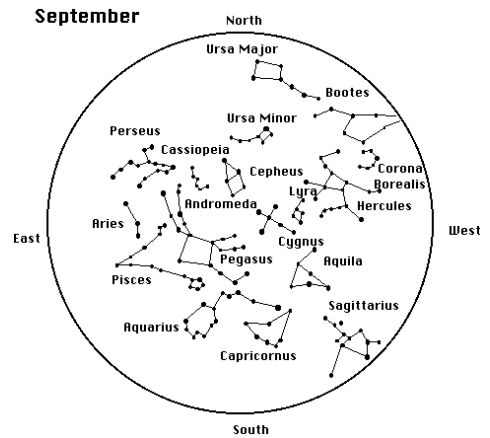
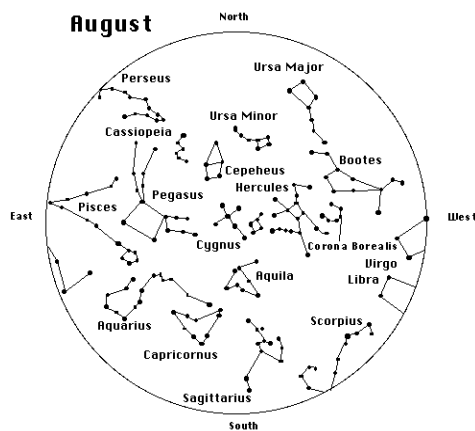
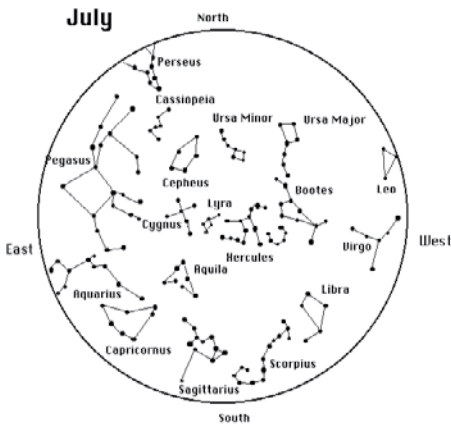
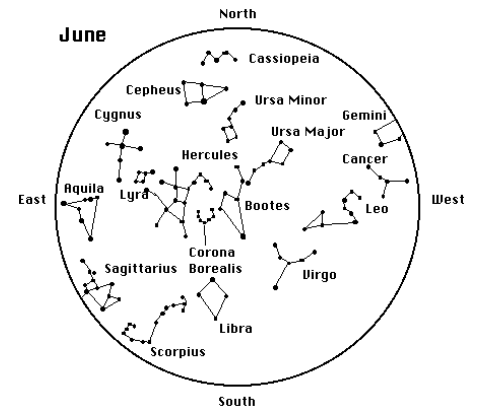
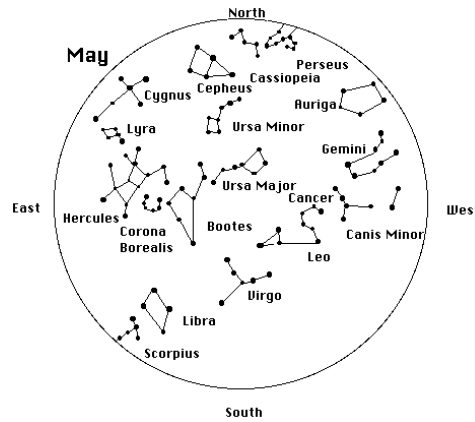
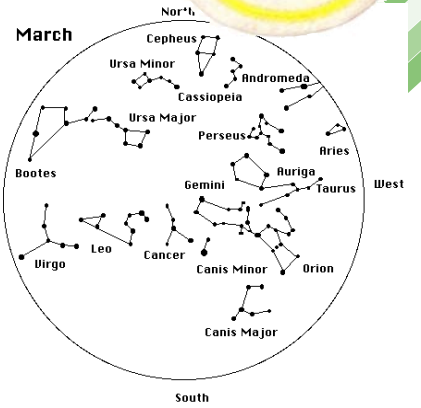
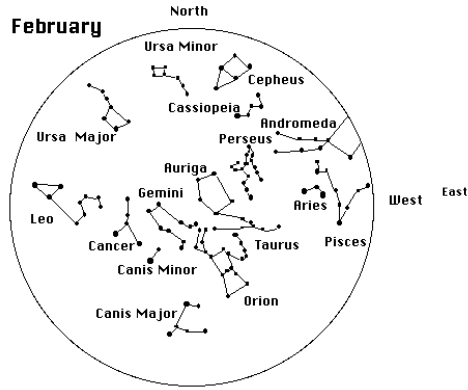
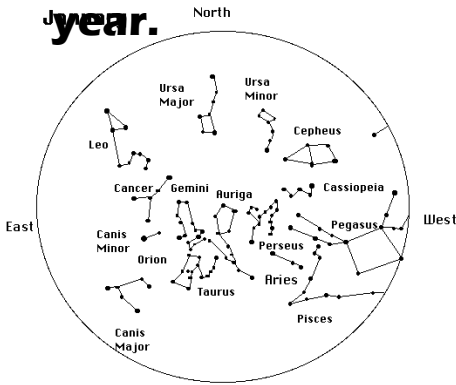
.....

.....

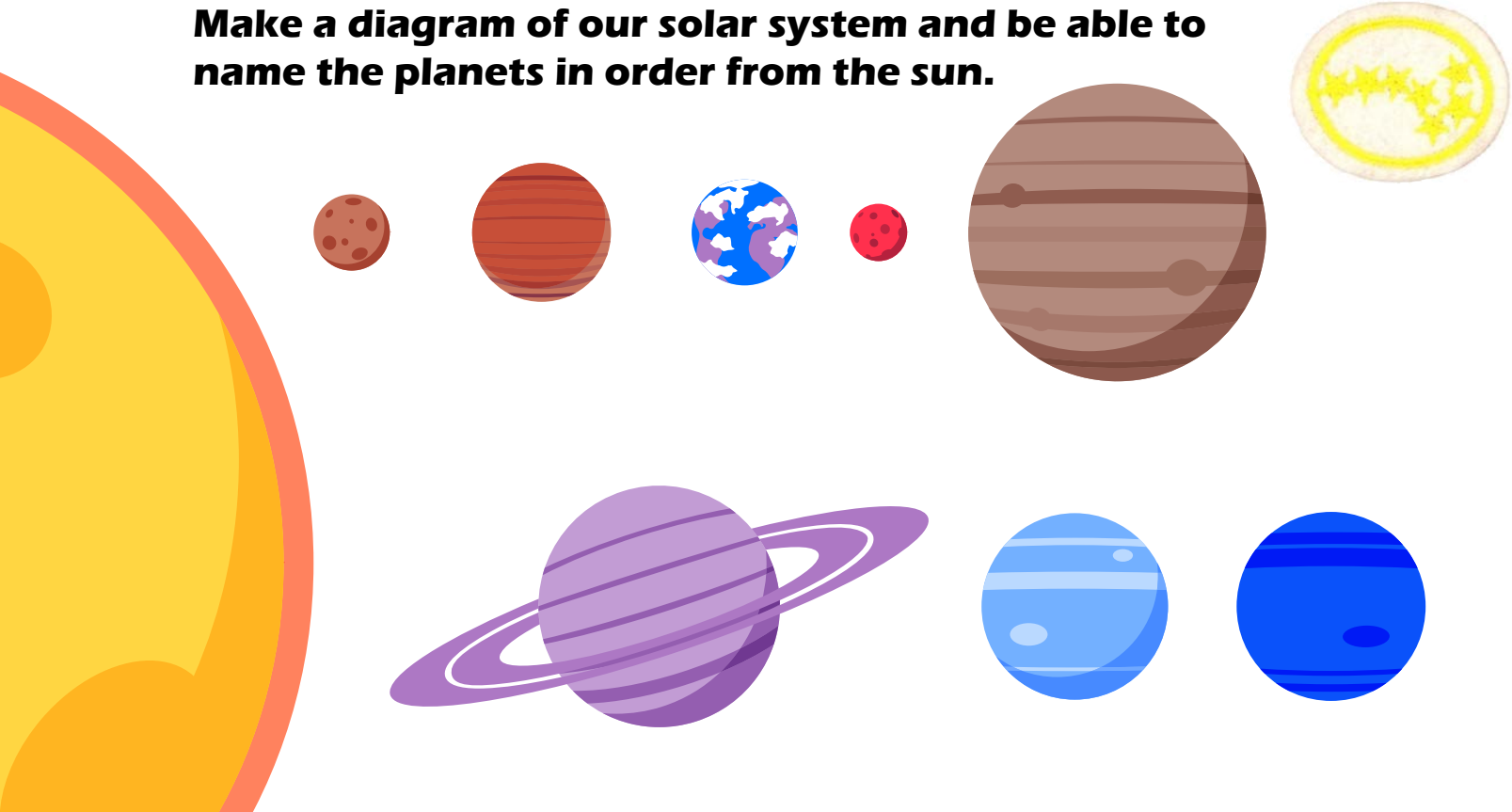
.....



What is a constellation? Name and point out six. Name two constellations visible throughout the year.



Make a diagram of our solar system and be able to name the planets in order from the sun.



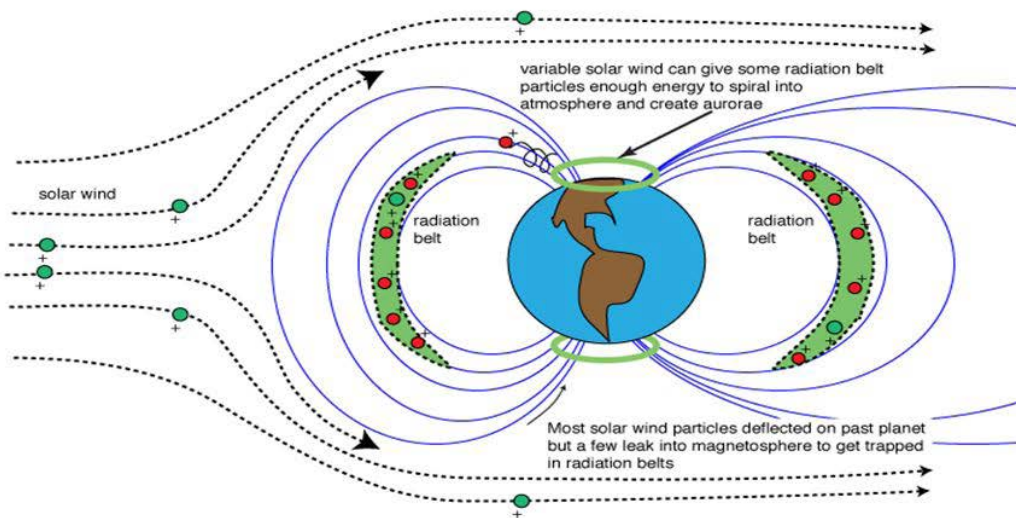
What is the aurora borealis? What causes it?

But... it also can cause the atmospheric molecules near the field lines to glow.

This causes the auroras:

Aurora Borealis, the Northern lights

Aurora Australis, the Southern lights.





Stars

Be able to identify in the sky: The North Star, Big Dipper, Little Dipper, and Orion

What is the difference between planets and fixed stars? Identify in the sky eight fixed stars.



Weather

Record and graph the weather for two weeks at 12-hour intervals.

Date	time	t°F	Relative Humidity	Clouds	Wind	Precipitation



Date	time	t°F	Relative Humidity	Clouds	Wind	Precipitation

Weather Station Symbols

<p>Cloud Coverage</p> <p>○ No Clouds</p> <p>◐ 1/10</p> <p>◑ 1/4</p> <p>◒ 1/2</p> <p>◓ 3/4</p> <p>◔ 9/10</p> <p>● Completely Overcast</p> <p>⊗ Sky Obscured</p>	<p>Wind Speed</p> <p>☉ Calm</p> <p>— < 5 knots</p> <p>— 5 knots</p> <p>— 10 knots</p> <p>— 20 knots</p> <p>— 25 knots</p> <p>— 50 knots</p>	<p>Cloud Types</p> <p><i>High Elevation</i></p> <p>Scattered Cirrus</p> <p>Dense Cirrus</p> <p>Cirrostratus</p> <p>Heavy Cirrostratus</p> <p>Cirrus & Cirrostratus</p> <p><i>Middle Elevation</i></p> <p>Thin Altostratus</p> <p>Thick Altostratus</p> <p>Thin Altocumulus</p> <p>Heavy Altocumulus</p> <p><i>Low Elevation</i></p> <p>Stratocumulus</p> <p>Fair Weather Cumulus</p> <p>Developing Cumulus</p> <p>Cumulonimbus</p> <p>Cirrocumulus</p> <p>Nimbostratus</p> <p>Stratus</p> <p>Fractostratus</p>	<p>Weather Conditions</p> <p>INTERMITTENT</p> <p>Light Moderate Heavy</p> <p>Rain • •• •••</p> <p>Snow * ** ***</p> <p>Drizzle ; ; ;</p> <p>STEADY</p> <p>Light Moderate Heavy</p> <p>Rain •• •••</p> <p>Snow ** *** **</p> <p>Drizzle ; ; ; ; ;</p> <p>THUNDERSTORMS</p> <p>Mild Moderate Severe</p> <p>Rain • •• •••</p> <p>Snow * ** ***</p> <p>Hail ⚡ ⚡ ⚡</p> <p>Other Symbols</p> <p>△ Hail</p> <p>⚡ Snow Grains</p> <p>⚡ Light Heavy</p> <p>⚡ Tornado</p> <p>↔ Ice Crystals</p> <p>↑ Freezing Rain</p> <p>↑ Light Heavy</p> <p>↑ Drifting Snow</p>
<p>Wind Direction</p> <p>N NW NE E SE S SW W</p> <p>Wind comes FROM the direction of the arrow.</p>	<p>Fronts</p> <p>Warm</p> <p>Cold</p> <p>Stationary</p> <p>Occluded</p> <p>Warm (Aloft)</p> <p>Cold (Aloft)</p>	<p>Air Pressure</p> <p>H High</p> <p>L Low</p>	



Learn the value of exercise, fresh air & sunshine.

Exercise

Sport	Benefits	Value

Fresh Air

- 1.
- 2.
- 3.
- 4.
- 5.
- 6.
- 7.

Sunshine

- 1.
- 2.
- 3.
- 4.
- 5.
- 6.
- 7.

Draw 8 Laws of Health

Complete the Basic Rescue Honor.



1. What is the definition of an emergency rescue?

A rescue is the act of removing someone from danger. An Emergency Rescue is a technical term for a rescue taking place under hazardous circumstances and with high risk to the rescue personnel, but must be done immediately to save a person's life. In this type of scenario to say a person is in immediate danger may be understated, normally if not removed from their circumstance as quickly as possible the victim will die quite soon. Technical rescues and rescue are descriptive of many types of circumstances, in all cases the victim is in danger. A cat up a tree or an otherwise uninjured person stuck in a crashed car are not likely to die in moments but will need to be rescued from their circumstance by someone with the means and skill to do so.

4. Know six indications for the need of an immediate rescue.

- The victim has stopped breathing
- The victim has severe bleeding
- The victim is being electrically shocked
- The victim has a heart attack
- The victim is on fire
- The victim is drowning
- The victim has been poisoned

5. Know six procedures to follow before moving a victim from a life-threatening situation.

Though the requirement is for only six principles, we present seven. This allows the student to forget one of the principles and still meet the requirement.

- The first task is to assess the whole situation and to plan the rescue.
- Be sure you can perform the rescue without injuring yourself.
- Make sure that moving the victim will not cause additional injury.
- Know where you intend to move the victim before lifting him.
- If bystanders must be used, it is essential that they be briefed in thorough detail on what you want them to do.
- Unless the danger is immediate, any first aid should be given before moving the victim.
- If you suspect a spinal injury, do not move the victim.

6. Know five principles involved in moving a victim from a life-threatening situation

Though the requirement is for only five principles, we present six. This allows the student to forget one of the principles and still meet the requirement.

- Be sure that it is necessary to move the victim. If it is not, do not move the victim.
- Know how you will move the victim before trying to move him.
- Know where you will move the victim before trying to move him.
- Be sure that you are able to lift the victim before lifting him. If the victim is too heavy, drag him instead.
- Maintain your balance. Do not start the move from an unbalanced position.
- Keep your footing throughout the move.

3. Show three ways of attracting and communicating with rescue aircraft.

Make a distress signal

Make a distress signal on the ground by piling rocks, branches, or other debris to form large letters spelling "S.O.S." This is the universally recognized signal for help. Try to use materials that contrast with the surrounding environment. In winter, you may be able to stomp an SOS into the snow. Make the letters read from east to west (or west to east) so that the shadows catch the letters better.

Light three fires

You may also light three fires to signal for help. Build them either in a line or in a triangle, and get them good and hot. When you see a rescue plane during daylight hours, add green plant matter to the flames. This should cause thick smoke. Be careful to not extinguish the fire by doing this.

Signaling mirror The emergency signaling mirror is approximately 3 by 5 inches and consists of an aluminized reflecting glass mirror, a back cover glass, and a sighting device. It is used to attract the attention of passing aircraft or ships by reflection, either in sunlight or in hazy weather. The reflections of this shatterproof mirror can be seen at a distance of 30 miles at an altitude of 10,000 feet. Though less effective, and

with possible shorter range, mirror flashes can also be seen on cloudy days with limited visibility. To use the mirror, proceed as follows:

- Punch a cross-hole in its center.
- Hold the mirror about 3 inches in front of your face and sight through the cross at the ship or aircraft. The spot of light shining through the hole onto your face will be seen in the cross-hole.
- While keeping a sight on the ship or aircraft, adjust the mirror until the spot of light on your face disappears in the hole. The bright spot, seen through the sight, will then be aimed directly at the search ship or aircraft.

11. What steps should be taken before reporting a lost person? What information will be needed when reporting a lost person? How is a search for a lost person conducted in a wilderness area?

Before reporting:

Children

If at home check your home carefully, contact your child's friends and your neighbors quickly to see if your child is with one of them. If at a store or mall contact management or security and have the child paged, if needed many stores today will "lock down" until all people and places are checked. If in a public place, do not panic. Try a high spot such as a chair or table to get a better vantage, and contact the facility management if there is one.

Gather yourself and be prepared to provide information to the police that will be relevant to the search for your child.

Adult

Adults must be missing for 24 hours and in some places 48 hours before a report can be filed. Contact known friends, work, and hang outs before reporting an adult missing. Adults who are mentally unstable for any reason or in need of medication for survival can normally be reported immediately as missing.

According to [Missingpersons.gov](https://www.missingpersons.gov) (<https://www.missingpersons.gov.au/find-out-more-about-missing-persons/faqs>) "You do not have to wait 24 hours to report someone as missing. If you have serious concerns for the safety and welfare of a person, and their whereabouts are unknown, then you may immedi-

ately report them missing (link) to your local police. Police will take a report where there are concerns for safety and welfare and their whereabouts are unknown."



Those on outings

If you are expecting loved ones to return from an outing and they are overdue be sure to contact their various phones and their home before calling authorities. If this is travel, some delays may be caused by weather and other circumstances that can be checked by calling the airport or travel authority for their means of travel. Road conditions can normally be checked through the state's department of transportation or the department of public safety (Highway Patrol). For those who were camping, hiking, or the like you will contact the forest/park authority for weather and road issues.

Be sure to have information on planned hiking routes and camping locations left behind by your loved ones so they can be used in a search if needed.

What will be needed

The more detailed your physical description to police can be the better. The color of eyes, hair and skin are needed but are not truly distinctive. Pictures are best and any identifying marks such as scars will help to identify a particular person quite well. The clothes the missing or lost person was wearing when last seen are very helpful too, as well as details on the vehicle(s) any adults may have been driving when last seen.

Age, date of birth, and other personal details such as family nicknames and family known information are helpful in child abduction cases. This information can not only be used to identify a child but to retrieve the child and gain trust with police. The person's doctor and dentist will also be helpful so have those names ready if possible.

Searches

In wilderness areas searches are conducted in an ever widening circle normally. All available resources are used including hunting dogs, aircraft, search hikers, and mounted search personnel. When a person is lost in the wilderness there is rarely any expense spared in the search for the person. If details are known about intended camping sites and hiking routes then teams will be sent to investigate those locations directly while others are sent into line of site search patterns where from the best known location for the missing

person(s) was outward with each searcher being within site of the next. This will also be done in staggered waves so that any evidence overlooked by one searcher might be found by the next. When the area becomes large enough to make line of site searches impractical the teams will be broken into zones using a search grid. A team of two or more will be assigned some small piece of the map area to search, all areas will be searched repeatedly for missed evidence or people. All the while roadways and known paths will have searches, or outposts on them in case the victim is still mobile and trying to work his way out of his circumstance. Aircraft will search in grids as well when weather provides. At night some aircraft may utilize heat sensors to try and identify people in the wilderness, this has proven effective at times and at

other times not. When an aircraft identifies a possible victim a search team in the grid will respond to the location, sometimes they find nothing; other times they find animals. If a person is seeking shelter in a very cold area, he may have burrowed deep enough into a location as to defeat the heat sensors on any aircraft as was the case with a child in Arizona who hid among some cactus which cool greatly at night. This particular child had evaded rescuers intentionally for more than a day because he was not supposed to talk to strangers.





2. Show how to safely rescue a person from the following situations:

a. Being in contact with a live electric wire

First, do not touch a person who comes into contact with a live electric wire. If you do, the electricity will also flow through your body, and there will be two victims instead of one. Instead, if you can quickly turn off the power source, do so immediately. If it cannot be turned off quickly, try to knock the wire off with something that does not conduct electricity, such as a shoe (take it off first), a wooden broom handle, or a wooden chair.

Once the victim has been separated from the electric power source, check for breathing. If the victim is not breathing, begin artificial respiration (mouth-to-mouth).

b. A room filled with fumes or smoke

In a fire, a person is far more likely to die from smoke inhalation than from exposure to flames. There are two things to remember about smoke: it rises, and if you inhale enough of it, it will kill you. Therefore, if you find yourself in a smoke filled room, get down and crawl. If you can, cover your mouth and nose with a wet cloth to help filter the smoke and keep it from entering your lungs. If water is not available, use a dry cloth - it's better than nothing. Make your way to the door and if it is closed, feel it. If it is hot, do not open it, as this means there is fire on the other side. Try to find another way out such as a window or another exit.

c. Clothes on fire

Get the person to the ground and roll him over and over on the ground. Another option is to wrap the victim with a blanket, coat, or jacket if one is handy. If your own clothes catch on fire, stop, drop, and roll - do the same thing to yourself as you would to someone else.

d. Drowning using a non-swimming rescue

Unless you have been trained to properly do so, avoid swimming to the assistance of a person who is drowning. A drowning non-swimmer is typically in a panic, and may grab onto anyone or anything he can reach in an effort to support their airway above the surface of the water. If the victim submerges the rescuer, the rescuer's life is endangered and the original victim has nobody to assist them.

Instead of entering the water, do one of the follow-

ing:

- Talk the victim in; coach them to kick their legs
- Throw life ring, life jacket, or some other flotation device to the victim
- Reach an item such as a rope, pole, oar, or paddle to the victim, and once the victim grabs it, pull them in
- Wade into shallow water attempt the above
- Row out to the victim in a boat, or use powered craft if possible; try the above from in the boat

e. An ice accident

The first rule of performing an ice rescue is to not run out to the victim. Remember, the ice was not strong enough to hold one person, so it is very unlikely that it will hold you.

Call for help

Before you do anything, call 911. Use a cell phone, or send someone else to make the call.

Reassure the victim

Tell the victim to remain calm, that you are aware of his predicament, and that you are going to help.

Reach out

Then see if there is anything available that is long enough with which you can reach the victim. Possibilities include tree branches, ladders, paddles, oars, shovels, etc. If necessary, you may lay it on the ice and push it out.

Throw a line

If you cannot find anything long enough, look for a rope or a rope-like item such as a garden hose or jumper cables. Throw one end of the rope to the victim.

Go to the victim

As a last resort you may have to venture out onto the ice. But don't just walk out there - lay a ladder on the ice and walk on it. This will distribute your weight over a greater area, decreasing the chances of another break (but not eliminating that chance). When you get to the end of the ladder, roll off, and laying next to it, scoot it out farther. If the ladder still does not reach the victim, get back on it and continue. Do this until you can extend the ladder to the victim.

If you cannot find a large object such as a ladder, take something else - anything. You'll need something to reach out to the victim with so that you do not have to go all the way to the edge of the ice hole. This could be your coat for example. Then lay down on the ice - again, you are trying to distribute your



weight over a larger area. Scoot over to the victim, and stretch out the item you brought with you, trying to keep your body as far from the edge of the hole as possible. Try to pull victim to safety. Once you get the victim to shore, begin treatment for hypothermia immediately.

7. Know the proper ways to help a victim, without assistance, in the following:

a. Pulling the victim

The shoulder drag is accomplished by placing the victim in a supine position (laying on his back), grasping the clothing behind his shoulders, and dragging him in the desired direction.



The blanket drag can be used to move a person who, due to the severity of the injury, should not be lifted or carried by one person alone. Place the casualty in the supine position on a blanket and pull the blanket along the floor. Always pull the casualty head first, with the head and shoulders slightly raised so that the head will not bump against the floor.

b. Lifting the victim



If there are no indications of injury to the spine or an extremity and the victim cannot walk, he can be carried by the Fireman's Carry. The figure here shows the steps of this procedure.

With the **pack-strap carry**,

it is possible to carry a heavy person for some distance. Use the following procedure:

- Place the casualty in a supine position.
- Lie down on your side along the casualty's uninjured or less injured side. Your shoulder should be next to the casualty's armpit.
- Pull the casualty's far leg over your own, holding it there if necessary.
- Grasp the casualty's far arm at the wrist and bring it over your upper shoulder as you roll and pull the casualty onto your back.
- Raise up your knees, holding your free arm for balance and support. Hold both the casualty's wrists close against your chest with your other hand.
- Lean forward as you rise to your feet, and keep both of your shoulders under the casualty's armpits. Do not attempt to carry a seriously injured person by means of the pack-strap carry, especially if the arms, spine, neck, or ribs are fractured.



c. Assisting a victim in walking

Support carry
In the support carry, the casualty must be able to walk or at least hop on



one leg, using the bearer as a crutch. This carry can be used to assist him as far as he is able to walk or hop.

hands under the arms and across the chest, and locks his hands. B The bearers rise together, lifting the casualty. C Alternate position, facing casualty.

8. Know the proper way to help a victim, with assistance, in the following:

a. Chair carry



Chair Carry in which the victim is placed in a chair and tilted backward as rescuers lift the victim. This carry requires two rescuers.

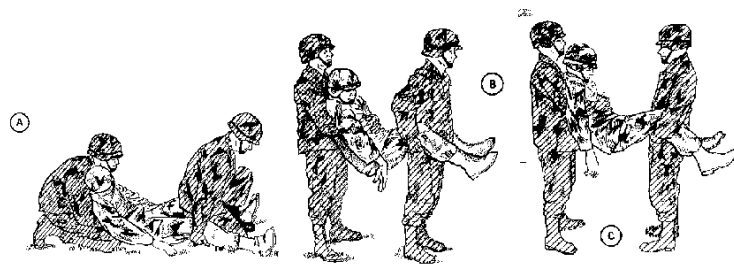
Two rescuers can also remove a victim by seating him or her on a chair:

Rescuer 1: Facing the back of the chair, grasp the back uprights.

Rescuer 2: Facing away from the victim, reach back and grasp the two front legs of the chair.

Both rescuers: Tilt the chair back, lift, and walk out.

b. Fore-and-aft carry



A The shorter bearer spreads the casualty's legs, kneels between the legs with his back to the casualty, and positions his hands behind the casualty's knees. The taller bearer kneels at the casualty's head, slides his

c. Two-handed and four-handed seats.

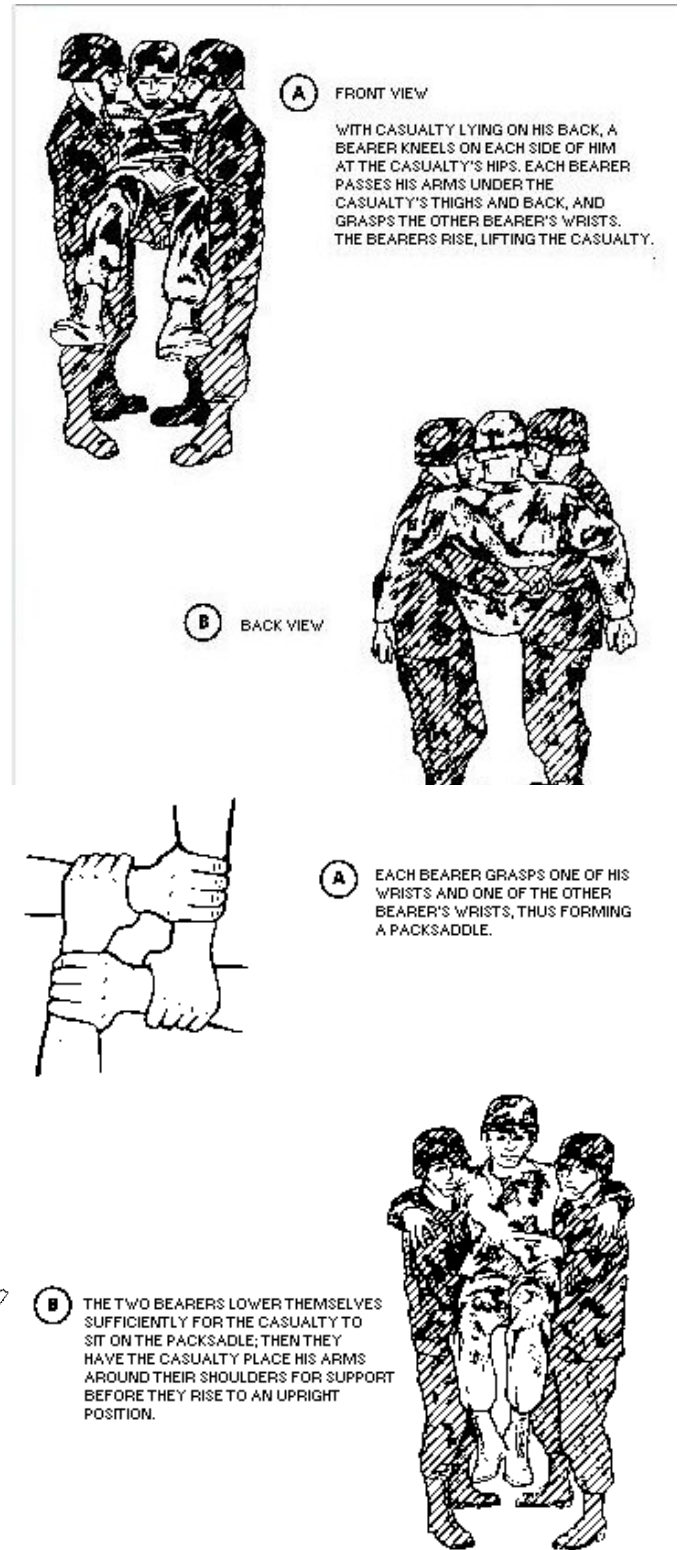


Figure B-14. Four-hand seat carry (Illustrated A and B)



The two-hand seat carry is used in carrying a casualty for a short distance and in placing him on a litter.

Only a conscious casualty can be transported with the four-hand seat carry because he must help support himself by placing his arms around the bearers' shoulders. This carry is especially useful in transporting the casualty with a head or foot injury and is used when the distance to be traveled is moderate. It is also useful for placing a casualty on a litter.

d. Blanket carry

The casualty is placed in the middle of the blanket lying on his back. Three or four people kneel on each side and roll the edges of the blanket toward the casualty, as shown in part A of the figure. When the rolled edges are tight and large enough to grasp securely, the casualty should be lifted and carried as shown in part B of the figure.

v

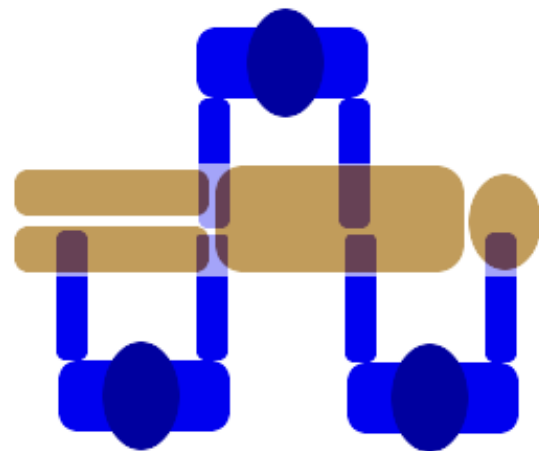


136.49

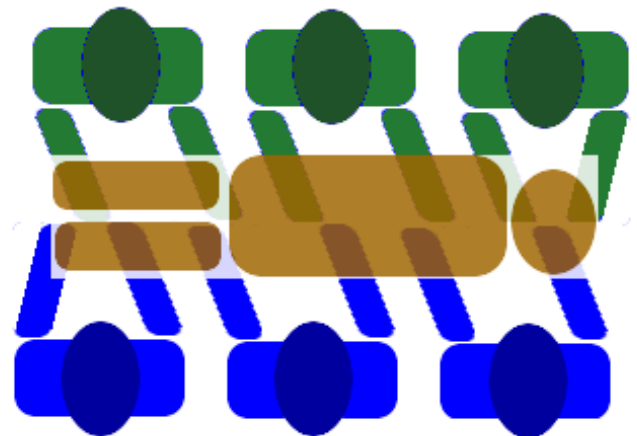
e. Three-man hammock carry with victim in supine and prone position

The three hammock carry is very similar to the two-person carry, except that three people are involved: One positioned at the victim's calves, one at the hips, and the third person at the shoulders. The carriers kneel on their knee nearest the victim's feet. The person at the victim's head gives the command, and all three lift the victim to their knees simultaneously. The victim is then turned so that he faces the rescuers. The person at the head then gives the command and the three rescuers stand.

f. Three- or four-man lift



g. Six-man lift and carry

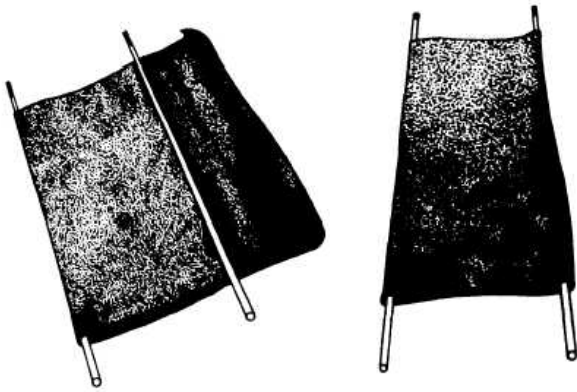


9. Know how to properly use a stretcher and carry a victim on a stretcher. Know how to make an improvised litter.

When transporting an injured person, always see that the litter is carried feet forward no matter



what the injuries are. This will enable the rear bearer to observe the victim for any respiratory obstruction or stoppage of breathing.



Standard stretchers should be used whenever possible to transport a seriously injured person. If none are available, it may be necessary for you to improvise. Shutters, doors, boards, and even ladders may be used as stretchers. All stretchers of this kind must be very well padded and great care must be taken to see that the casualty is fastened securely in place. Stretchers may be improvised by using two long poles (about 7 feet or 2.1 meters long) and strong cloth, such as a rug, a blanket, a sheet, a mattress cover, two or three gunny sacks, or two coats. The figure here shows an improvised stretcher made from two poles and a blanket.

CAUTION: Many improvised stretchers do not give sufficient support in cases where there are fractures or extensive wounds of the body. They should be used only when the casualty is able to stand some sagging, bending, or twisting without serious consequences. An example of this type of improvised stretcher would be one made of 40 to 50 feet of rope or 1 1/2-inch firehose.



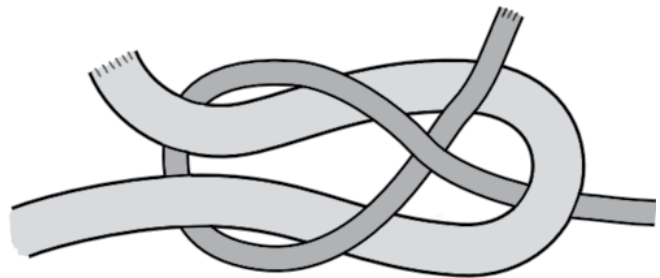
10. Know how to properly use ropes and knots as follows:

a. Tie knots for joining ropes together

Sheetbend

Use: The sheet bend knot is excellent for joining two ropes together, especially if the two ropes are not the same size. When tied properly, it will not come undone, and it is easy to untie. It is very similar to the bowline.

How to tie:



Make a bight at the end of the larger rope (if they are not the same size).

Run the end of the smaller rope through the bight, entering from the bottom.

Wrap the end of small rope around the back of the large rope, crossing the short end of the large rope first.

Tuck the end of the short rope under itself, on top of the bight.

Square Knot

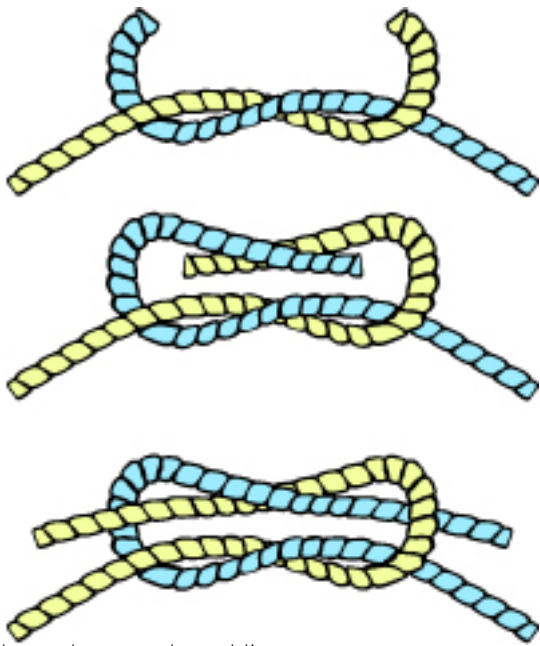
Use: Also known as a Reef knot, the Square Knot is easily learned and useful for many situations. It is most commonly used to tie two lines together at the ends. This knot is used at sea in reefing and furling sails. It is used in first aid to tie off a bandage or a sling because the knot lies flat.

How to tie:

Pass left end over and under right end.

Curve what is now the left end toward the right and cross what is now the right end over and under the left.

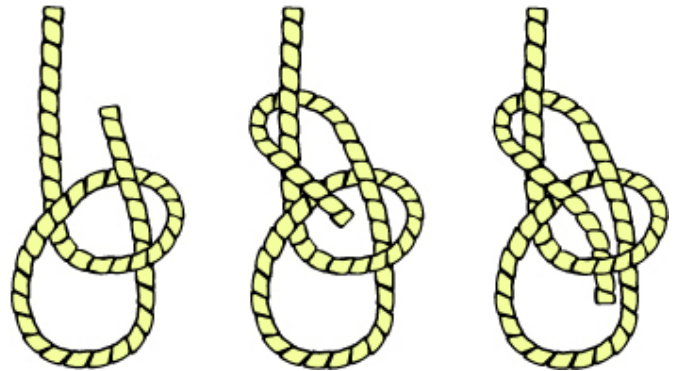
Draw up tight by pulling one end and line away from



c. Tie knots for use around a person for a rescue

Bowline

Use: This knot doesn't jam or slip when tied properly. It can be tied around a person's waist and used to lift him, because the loop will not tighten under load. In sailing, the bowline is used to tie a halyard to a sail head.



the other end and line.
WARNING: Do not rely on this knot to hold weight in a life or death situation. It has been known to fail.

Surgeon's knot

Use: The surgeon's knot is similar to a square knot, except that the first stage is doubled. This helps the knot stay tight while it is being tied.

How to tie:

Make the overhand loop with the end held toward you, then pass end through loop. Now pass end up behind the standing part, then down through the loop again. Draw up tight.



d. Coil and accurately throw a light and a heavy 50-foot (15.2 m) rope.

Separate the rope into two equal sized coils, with a little less than half the rope in each coil. Choose one end that you will hang on to, and grasp it firmly in the palm of one hand, using the three smallest fingers to hold it securely. Hold the rest of that coil between the index finger and thumb, and hold the other coil in the other hand. Take aim, and throw both coils toward the victim at the same time while retaining your grip on the end. If you have difficulty with this, try standing on the end of the rope you wish to keep with you. Using this method, you can throw the rope quite a bit farther than if you had thrown a single coil. This is because the second coil will not begin to unravel until the first one uncoils. Practice until you can hit a target with the rope from the 50-foot (15 meter) mark.

b. Tie knots for shortening a rope
Sheepshank

Use: The sheepshank knot is used to shorten a length of rope. It comes undone easily unless it is under tension.



WARNING: Keep this knot under tension or it will come untied.

Complete the Basic Water Safety Honor if not previously earned.



1. Enter and exit the water un-assisted.

The point is to teach how to get in and out of a pool without assistance and safely.

2. While holding your breath, fully submerge your face under water for five seconds.

Demonstrate water skill/task.

3. Alternately inhale through the mouth above the surface and blow bubbles through the mouth/nose, with face completely submerged, seven times rhythmically and continuously.

This would be a good opportunity to tell the story of Naaman as found in 2 Kings 5.

4. Open your eyes under water and retrieve submerged objects two times.

An excellent motivational object to use for this is a large coin such as a quarter or a silver dollar. This serves as motivation only if you agree to let the Pathfinder keep the coin once it is retrieved the second time.

5. Front float for five seconds.

Demonstrate water skill/task.

6. Front glide for two body lengths.

Demonstrate water skill/task.

7. Back float for fifteen seconds.

Demonstrate water skill/task.

8. Holding on to the side of the pool, kick with your feet for twenty seconds.

Demonstrate water skill/task.

9. Using arm and leg motion, swim five body lengths.

Demonstrate water skill/task.

10. Learn to put on a Life Jacket and float for thirty seconds.

Demonstrate water skill/task.

11. Demonstrate water safety by:

a. How to call for help in case of an emergency.

How you call for help depends on who needs help, and where you are when help is required.

- If you are calling for help for someone else and have access to a telephone, dial 911.
- If you are calling for help for someone else and you are in the water too, yell "Help!" as loud as you can. If there is a lifeguard present, go to him or her as quickly as you can and tell them someone is in trouble.

- If you yourself need help while in the water, call out for it and wave your arms.

b. Learn how to release a cramp.

The most frequent muscle to suffer a cramp from swimming is the calf muscle. To release a calf cramp while swimming, float on your back, stretch your legs out in front of yourself, and point your toes toward your head while pushing your heel out away from your head. This will stretch the calf muscle.

c. Demonstrate reaching assist.

Firmly brace yourself on a pool deck, pier or shoreline, and reach out to the person with any object that will extend your reach, such as a pole, oar, paddle, tree branch, shirt, belt or towel. If no equipment is available, you can perform a reaching assist by lying down and extending your arm or leg for the person to grab.

d. Learn at least ten safety rules when around water.

1. Learn to swim before you go into the water. Sounds silly, but many people think it will come naturally, and it really doesn't.
2. Swim near a lifeguard so help is available if you need it.
3. Never swim alone.
4. Supervise children closely, even when lifeguards are present
5. Don't rely on flotation devices, such as rafts, you may lose them in the water.
6. Alcohol and swimming don't mix.
7. Protect your head, neck, and spine by never jumping or diving into unfamiliar waters.
8. As soon as you believe that you may be in trouble, call or wave for help.
9. Follow regulations and lifeguard directions.
10. Swim parallel to shore if you wish to swim long distances.



Complete the Beginner Swimming Honor
if not previously earned.



Have completed the Water Safety Honor Requirements

Instructions and tips for earning the Basic Water Safety honor can be found in the Recreation chapter.

Water Entry Skills:

1. Enter water by jumping from the side of the pool, or from into the water from a dock into a safe area for jumping.
2. Headfirst entry from the side in a sitting position. Headfirst entry should NOT be taught unless the water depth is at least 9 feet.
3. Headfirst entry from the side in a kneeling position. Headfirst entry should NOT be taught unless the water depth is at least 9 feet.

Breath Control and Submerging:

1. Bobbing while moving toward safety – demonstrate in chest-deep water at least 5 times.
2. Demonstrate rotary breathing, at least 10 times.

Buoyancy:

1. On front, demonstrate the survival float, at least 30 seconds in deep water.
2. On back, demonstrate moving into a back float in deep water, and hold the float at least 30 seconds.

Changing Positions:

1. Change from a vertical to horizontal position on the front, in deep water.
2. Change from a vertical to horizontal position on the back, in deep water.

Treading Water:

1. Demonstrate treading water for at least 30 seconds in deep water.

Front Swim:

1. Push off in a streamline position, then begin the flutter kick. Kick in streamline position 3-5 body lengths.
2. Push off in a streamline position, then begin the dolphin kick. Demonstrate 3-5 body lengths.[edit]
3. Front crawl, at least 15 yards, with good rotary breathing.

Back Swim:

1. Elementary backstroke, demonstrate smooth finning and whip kick for at least 15 yards.[edit]

Side Swim:

1. Demonstrate, at least 10 yards, the side scissors kick.

Water Safety:

1. Reach or Throw, Don't Go—reaching assists, demonstrate.
2. Think Twice Before Going Near Cold Water or Ice—discuss/demonstrate.
3. Look Before You Leap—understand and demonstrate.

Passing Skills:

Jump into chest-deep water from the side, swim front crawl for 15 yards, maintain positions by treading water or floating for 30 seconds, and swim elementary backstroke for 15 yards.

Complete Knot Tying Honor

Knot tying is an important part of Pathfinding with tie ins to Investiture Achievement and many other honors such as the various Camping Honors, Rock Climbing, Pioneering and others.

1. Define the following terms:

It's a good idea to begin this honor with the definitions so your Pathfinders have a working vocabulary of the various terms involved. Telling them to "make a bight" or "take the standing part" makes little sense until these terms are understood.

1. Bight

The term bight refers to any curved section, slack part, or loop between the two ends of a rope,

2. Running end

The free end of the rope, usually shorter. This is the end of the rope in which a knot is being tied.

3. Standing part

The part of the rope between the Running end and the Standing end (the end that doesn't move, think of it as if someone is holding it)

4. Underhand loop

A loop formed by passing the running end of a line under the standing part.

5. Overhand loop

A loop formed by passing the running end of a line over the standing part.

6. Turn

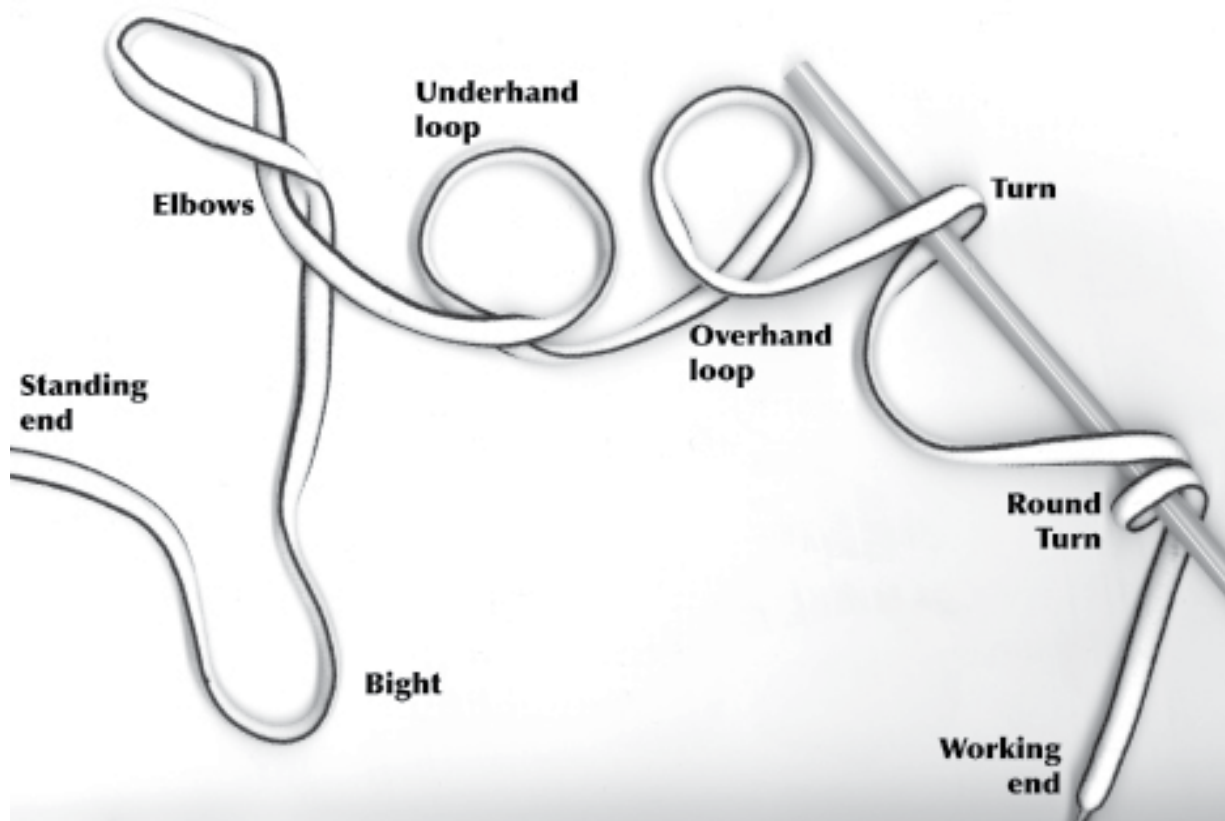
A turn is a component of a knot. Turns can be made around objects, through rings, or around the standing part of the rope itself. Turns come in various forms, distinguished by the number of passes that the rope makes. A turn or single turn requires one pass. The line makes a U-shape through or around the object, or half a revolution. A round turn requires two passes and makes one and a half revolutions. Two round turns adds another pass and revolution.

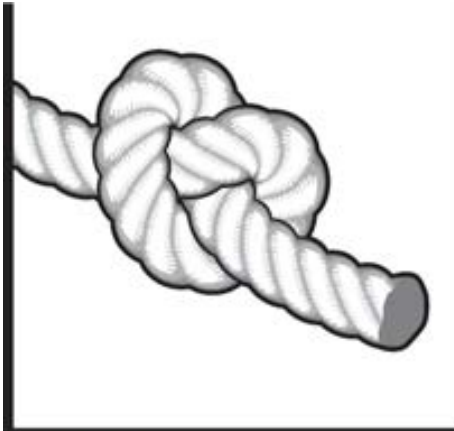
7. Bend

A bend is used to tie two ropes together, as in the Sheetbend. Technically, even the Reef knot is a bend.

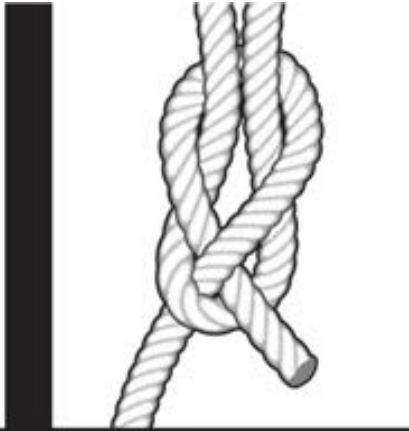
8. Hitch

A hitch is used to tie a rope to a spar, ring or post, such as the Clove hitch. Hitches can also be used to tie one

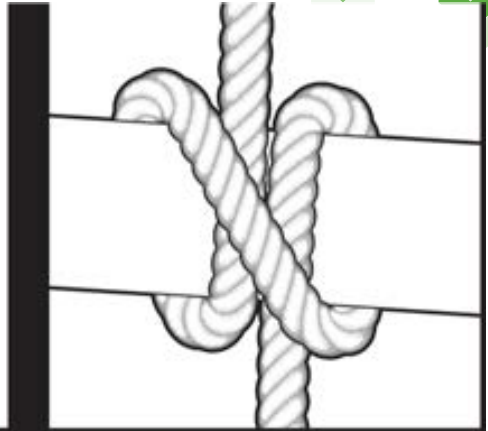




KNOT



BEND



HITCH

rope ONTO another rope, as in the Rolling hitch.

9. Splice

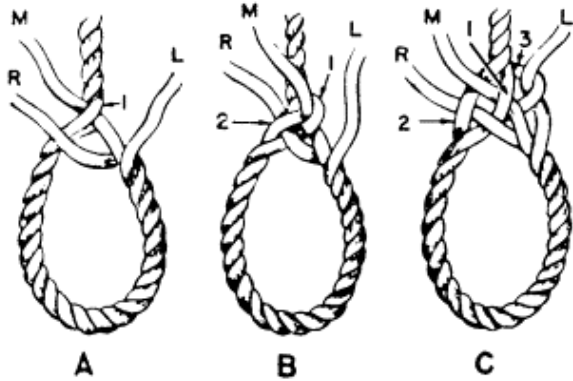
A knot formed by interweaving strands of rope rather than whole lines. More time consuming but usually stronger than simple knots.

10. Whipping

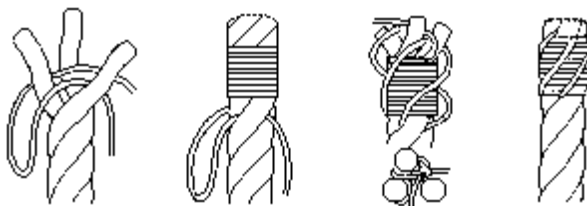
A binding knot used to prevent another line from fray.

2. Know how to care for rope.

a. Keep the rope clean.



- b. Always coil a rope before storing it.
- c. Make sure wet rope is dry before coiling it.
- d. Return rope to its proper place after using it.



3. Describe the difference between laid rope and braided rope and list three uses of each.

In laid rope, three bundles of fiber or twine are twisted in the same direction, placed close to each other, and allowed to twist together. In braided rope, the fibers are woven together, often around some core material.

Uses of Laid Rope

- Repels water.
- Able to withstand immense strain.
- Can be spliced with standard techniques.

Uses of Braided Rope

- Works well with pulleys and rigging.
- Spinning (lariats and lassos).
- Decorative knots.

4. Identify the following types of rope:

a. Manila

Manila is a type of fiber obtained from the leaves of the abacá (Musa textilis), a relative of the banana. It is mostly used to make ropes and it is one of the most durable of the natural fibers, besides true hemp. Manila is a coarse, brown fiber, about the same color and feel as a coconut shell.

b. Sisal

Sisal is valued for cordage use because of its strength, durability, ability to stretch, affinity for certain dyestuffs, and resistance to deterioration in saltwater. Sisal ropes and twines are widely employed for marine, agricultural (baling twine), and general industrial use. Sisal fibers are smooth, straight and yellow and can be long or short.

c. Nylon

Nylon rope is often white, but any color is possible. It has a smooth, silky feeling to it, and it coils easily. Nylon rope does not float in water. It is a synthetic-fiber rope.

d. Polypropylene

Polypropylene rope is most often yellow, though any color is possible. It is often used in marine applications because it floats in water. The rope is sometimes difficult to tie as it is somewhat stiff and brittle. It is a synthetic-fiber rope.

The easiest way to make an initial identification of a rope is to visit a hardware store where rope is sold. The packaging will tell you what the rope is made of. If you want to be sure, buy some of each type (with the labeling) or examine it closely in the store.

5. What are some advantages and disadvantages of synthetic rope?

Advantages

- Improved abrasion-resistance
- Better UV-resistance
- Lighter
- Length does not vary as much when wet
- Rot-resistant

Disadvantages

- Some synthetics do not hold knots well
- More slippery
- Melts when heated
- Stretches more than natural ropes.

6. Do the following to rope:

a. Splice

A splice (short splice or long splice) is used to join the ends of two ropes and results in the spliced part being about twice as thick as the non spliced part. The short splice retains more of the rope strength than any knots that join rope ends. It is tied using the same techniques as the eye splice (see below).

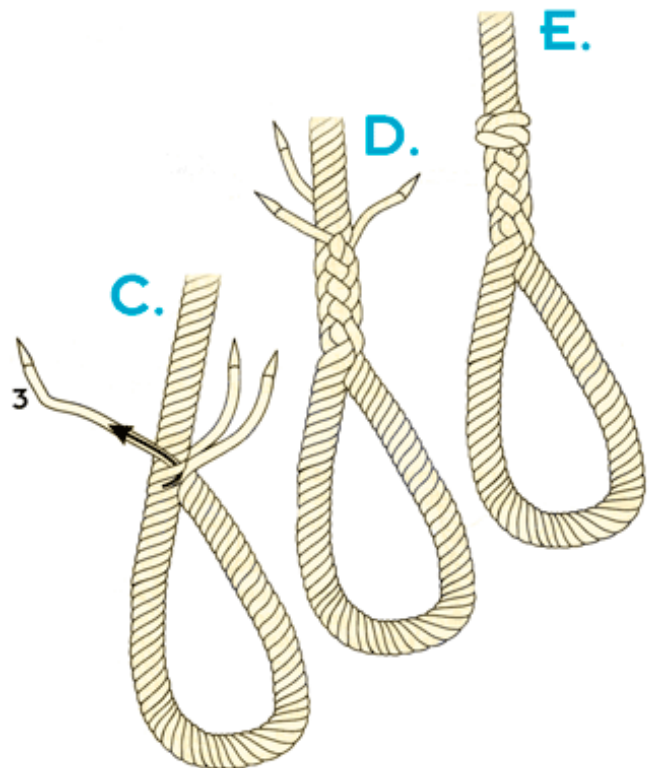
b. Eye splice

Use: The eye splice is the best method of creating a permanent loop in the end of multi stranded rope by means of rope splicing. The ends of the rope are tucked (plaited) back into the standing end to form the loop. Originally this splice was described with each end being tucked only about three times. When the splice was made in tarred hemp or cotton this was reasonably safe. With modern synthetic ropes, five complete tucks is a minimum and additional tucks

are recommended for critical loads.

How to tie:

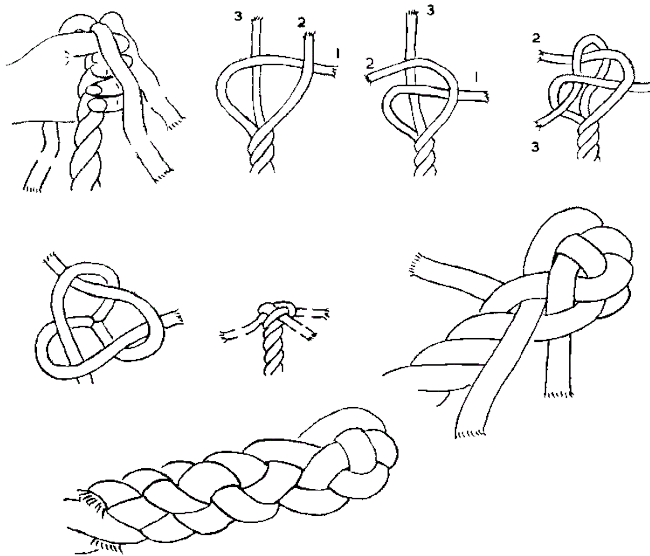
The ends of the rope are first wrapped in tape or heated with a flame to prevent each end from fraying completely. The rope is unlayed for a distance equal to three times the diameter for each "tuck", e.g., for five tucks in half inch rope, undo about 7.5 inches. Wrap the rope at that point to prevent it unwinding further. Form the loop and plait the three ends back against the twist of the rope. Practice is required to keep each end retaining its twist and lie neatly.





c. Back splice

A back splice (also called an end splice) is a splice where the strands of the end of the rope are spliced directly back into the end without forming a loop. It is used to finish off the end of the rope to keep it from fraying. The end of the rope with the splice is about twice the thickness of the rest of the rope. Begin by unraveling the strands, and tie a crown knot. Then begin splicing the rope onto itself as with the short splice.



d. Finish the end of a rope with a double crown, whipping, or a Matthew Walker's knot.

Double crown knot

Use: A double crown knot is a decorative knot tied on the end of a laid rope to prevent it from unraveling.



How to tie:

Tie a crown knot in the end of the rope. Pull the three strands upwards, away from the standing part, and tie another crown knot.

Common whipping

Use: The common whipping is the simplest type of whipping knot, a series of knots intended to stop a rope from unraveling. As it can slip off of the rope easily, the common whipping should not be used for rope ends that will be handled. This whipping knot is also called 'wolf' whipping in some parts of the world. The benefit of a common whipping is that no tools are necessary and the rope does not need to be unlayered. The problem is that it will slide off the end of the rope with little provocation. Other whippings avoid this by interweaving the whipping with the strands of the rope and creating friction with the strands to avoid slipping.

Normally a natural fiber rope is whipped with twine. The size of the rope dictates the size of the twine. Any twine can be used, but tarred two strand hemp (marline) is preferred. Artificial-fiber ropes should have their ends fused by heat rather than whipped to prevent unraveling.

Matthew Walker knot

Use: A Matthew Walker knot is a decorative knot that is used to keep the end of a rope from fraying. It is tied by unraveling the strands of a twisted rope, knotting the strands together, then laying up the strands together again. It may also be tied using several separate cords, in which case it keeps the cords together in a bundle.



How to tie:

A Matthew Walker knot is tied in a circular bundle of any number of strands. To tie the knot, the tier takes each strand and forms a loop around the rest of the bundle, then passes the end through the newly-formed loop to form an overhand knot. He then moves to the next strand over, moving around the bundle in the direction he passes the loops. Tying the first strand around the bundle is straightforward, but each subsequent end must be passed through the previously-formed loops in order to contain all of the other strands in its loop. When tightening, it may help to roll the knot along the bundle, especially when using only two strands. The final effect is a spiral knot vaguely resembling a section of a barber's pole.

7. Make a six-foot piece of three-strand twisted rope from native materials or twine.

Making rope requires some simple apparatus which you can make yourself easily enough. The first apparatus (we'll call it the twister) is used for twisting three strands of twine (or smaller rope). When making the twister, clamp the two boards that form the handles together tightly and drill three holes through both at the same time. This will ensure that they line up. The hook/crank portion of the twister can be made from coat hanger wire. First make the two 90° bends in the center, then pass them through the holes in the handles. Finally, form the hooks on one end and the other 90° bend on the other. (This final bend prevents the crank from slipping out of the holes in the handle).

As the strands are twisted, they will tend to grab one another and twist together. To make rope, this tendency has to be controlled. This is done with a second apparatus (we'll call it the separator). It consists of a board with three holes drilled in it, forming the points of an equilateral triangle. These points should be at least six inches away from one another, and should be large enough to pass the strands of twine through.

To make rope, cut three pieces of twine about 33% lon-

ger than the desired rope. Pass each strand through a hole in the separator, then tie a non-slip loop in the end of each (a figure-eight on a bight works well for this). We will call this end of the strands the free end. Slip these loops over a hook of some sort, and pull the strands straight. Bunch the ends opposite the loops together, and tie them off, again in a loop (and again, a figure-eight on a bight works well for this). We will call this end the bound end. Make sure that the three strands are the same length from one loop to the other. Hand the bound end to a helper, then attach the loops on the free end to the hooks on the twister. Pull the twister away from the bound end (still affixed firmly to another hook) until the strands are straight and tight. Then slide the separator towards the common end. Start cranking the twister so that the hooks rotate. As you crank, your helper will allow the three strands on his side of the separator to twist together. As they do this, the helper will slide the separator towards you, going only as fast as the strands bind to one another. Be careful to keep the strands tight as you do this so that they do not bind to one another on your end of the separator. Continue twisting until the separator reaches the twister. Then tie a knot in the free end of the rope, unhook it from the twister, and slide the separator off. Tie a stopper knot, or bind the end with tape. Then cut off the few inches of untwisted strand that remain (or make a back splice). Finish the opposite end in the same manner. Voila! You now have a rope!



8. From memory tie at least 20 of the following knots and know their common uses and limitations. Demonstrate how they are used.

Anchor bend

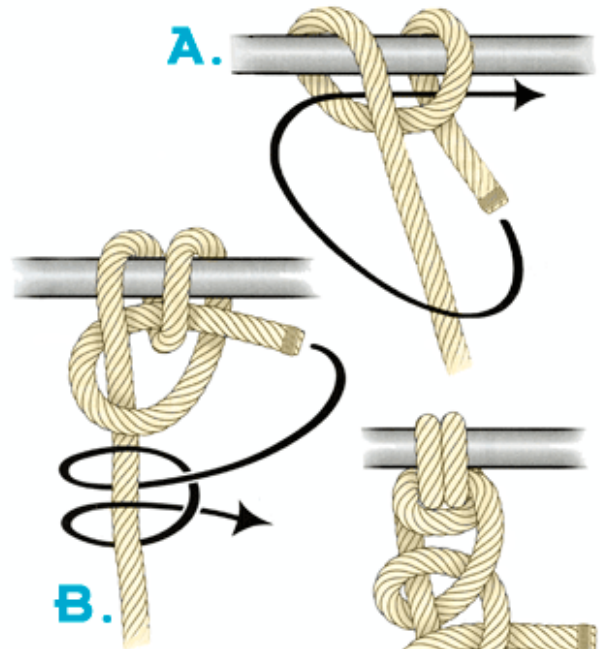
Use: The Anchor Bend is a knot used for attaching a rope to a ring or similar termination. The round turn and tight application help keep the rope from chafing.

How to tie:

Make two turns around a hitch.

Pass the running end around the standing end and beneath the two turns.

Finish with a half hitch on the standing end.



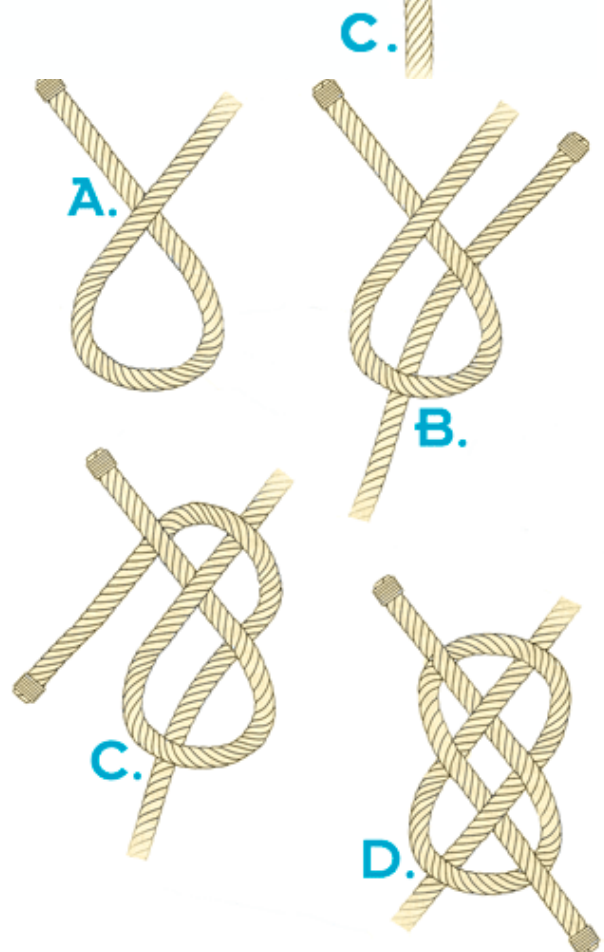
Carrick bend

Use: The Carrick bend is used for joining two lines. It is particularly appropriate for very heavy rope or cable that is too large and stiff to easily be formed into other common bends. It will not jam even after carrying a significant load or being soaked with water. The Carrick bend's aesthetically pleasing interwoven and symmetrical shape has also made it popular for decorative purposes.

In the interest of making the Carrick bend easier to untie, especially when tied in extremely large rope, the ends may be seized to prevent the knot from collapsing when load is applied. This practice also keeps the knot's profile flatter and can ease its passage over capstans or winches.

The ends are traditionally seized to their standing part using a Round seizing. For expediency, a series of double constrictor knots, drawn very tight, may also be used. When seizing the Carrick bend, both ends must be secured to their standing parts or the bend will slip.

WARNING: The Carrick bend is generally tied in a flat interwoven form shown above. Without additional measures it will capsize (collapse) under load into a secure and stable, although bulky, form. If the knot is allowed to capsize naturally under tension, considerable slippage of line through the knot can occur before tightening. The knot should be upset carefully into the capsized form and worked up tight before actual use.

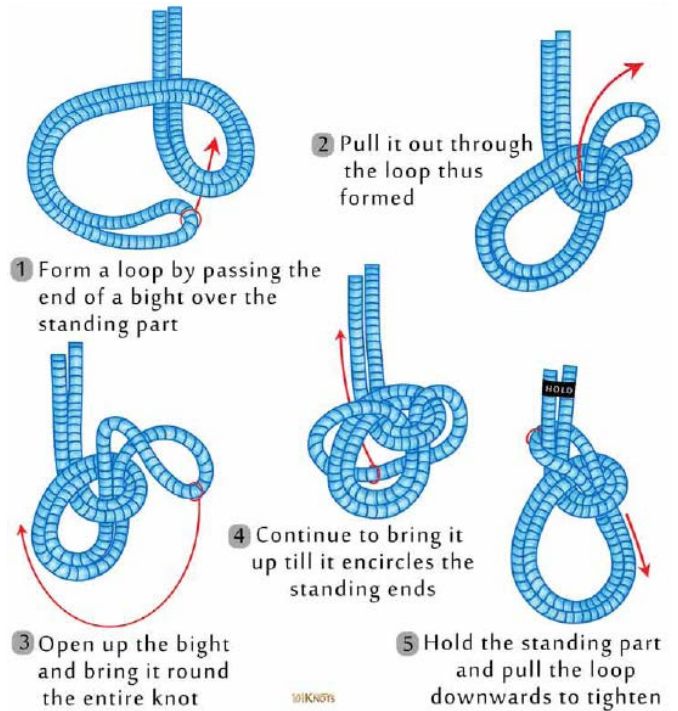


Bowline on a bight

Use: This makes a secure loop in the middle of a rope which does not slip.

How to tie:

A bight is the middle part of the rope (not the ends)
 In the middle of a rope, form a small loop.
 Thread the bight through the loop.
 Spread out the bight a little.
 Pass this down and around the whole knot.
 Continue until it come back to the neck where it started.
 Tighten the bight to complete the knot. Tighten carefully so that you don't get a kind of slip knot.

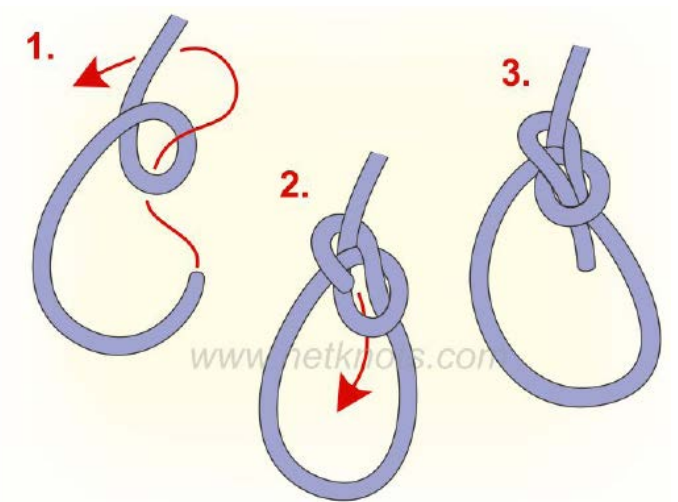


Bowline

Use: This knot doesn't jam or slip when tied properly. It can be tied around a person's waist and used to lift him, because the loop will not tighten under load. In sailing, the bowline is used to tie a halyard to a sail head.

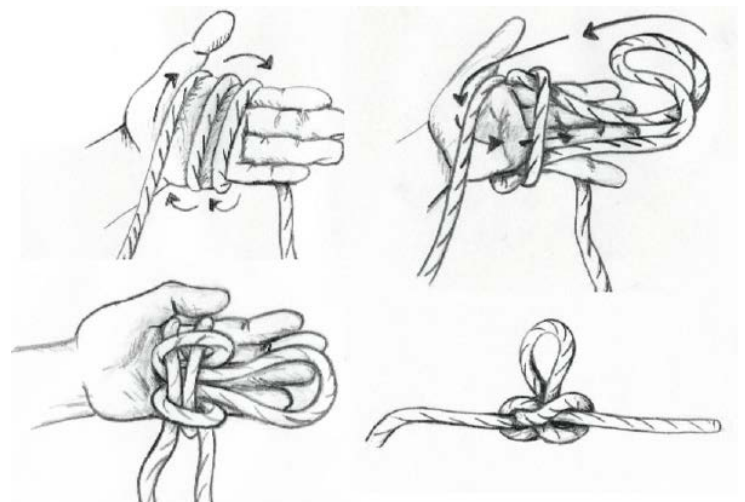
How to tie:

Make the overhand loop with the end held toward you, then pass end through loop.
 Now pass end up behind the standing part, then down through the loop again.
 Draw up tight.



Alpine butterfly

Use: The Butterfly Loop has a high breaking strength and is regarded by mountaineers as one of the strongest knots to attach climbers to the middle of a rope, such that they have room to move around even when the main rope goes tight, and they can be supported in either direction from the main rope. The loop is typically attached to a climbing harness by carabiner. It can also be used to isolate a worn section of rope, where the knot is tied such that the worn section is used for the center of the loop.



Cat's paw

Use: The Cat's paw is used for connecting a rope to an object.

Attaching a rope to a hook (or to a post or rail where the load is perpendicular to the post) with more security than a simple girth hitch.

Joining an eye to a ring.

Strongly joining eyes in the ends of two lines, where there is access to the end of at least one line.

How to tie:

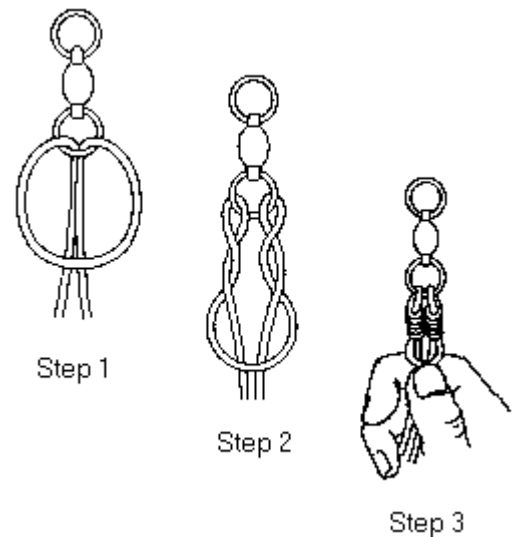
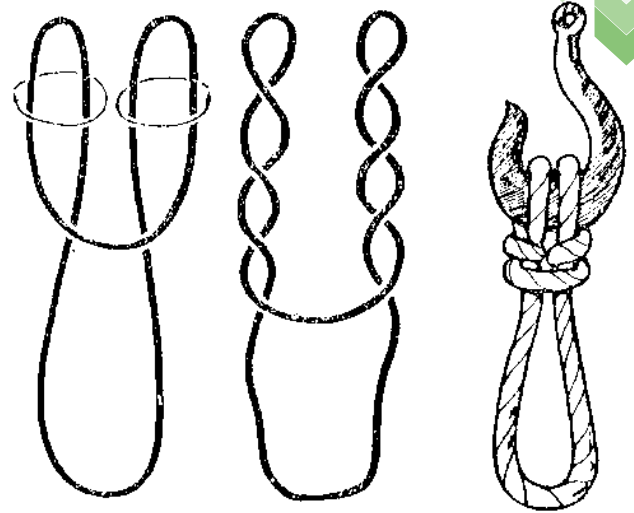
Method 1

Form a bight in the middle of the line, and pull it back over itself like a girth hitch. This forms two loops, turned in opposite directions. Give each loop one more full turn in the direction that will tend to tighten it (the wrong direction will undo the loop completely). Pass both loops over the hook, rail or post and pull tight, taking care to push the bight up snugly against the turns.

Method 2

If working end of the line has an eye in it, and the standing end is accessible, the knot can be tied to a closed ring, another eye, or a rail with inaccessible ends, as follows. Pass the eye around the ring or rail, then pass the standing end through its own eye (this effectively forms a girth hitch). Then pass the standing end through the eye again, and pull up tight, taking care to push the bight up snugly against the turns.

When using the cat's paw to join two eyes, this process may be repeated several times to give several turns - as many as five in a fine fishing monofilament. Then when tightened, instead of pulling the bight up against the turns, both eyes are pulled equally, to make neat coils of turns in both eyes, meeting halfway between them.

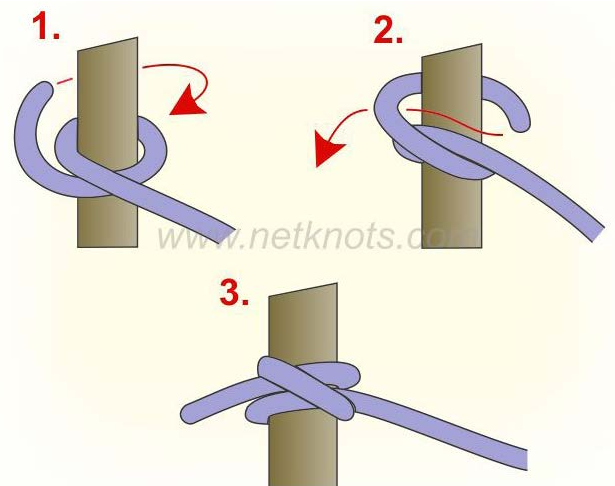


Clove hitch

Use: This knot is the "general utility" hitch for when you need a quick, simple method of fastening a rope around a post, spar or stake (like tying wicks to sticks in Candlemaking) or another rope (as in Macrame)

How to tie:

Make a turn with the rope around the object and over itself. Take a second turn with the rope around the object. Pull the end up under the second turn so it is between the rope and the object. Tighten by pulling on both ends.



Constrictor Knot

Use: The Constrictor knot is one of the most effective binding knots. Simple and secure, it is a harsh knot which can be difficult or impossible to untie once tightened. It is made similarly to a clove hitch but with one end passed under the other, forming an overhand knot under a riding turn. Because this knot will not slip when tied around a stick, it is an excellent knot for making a rope ladder.

How to tie:

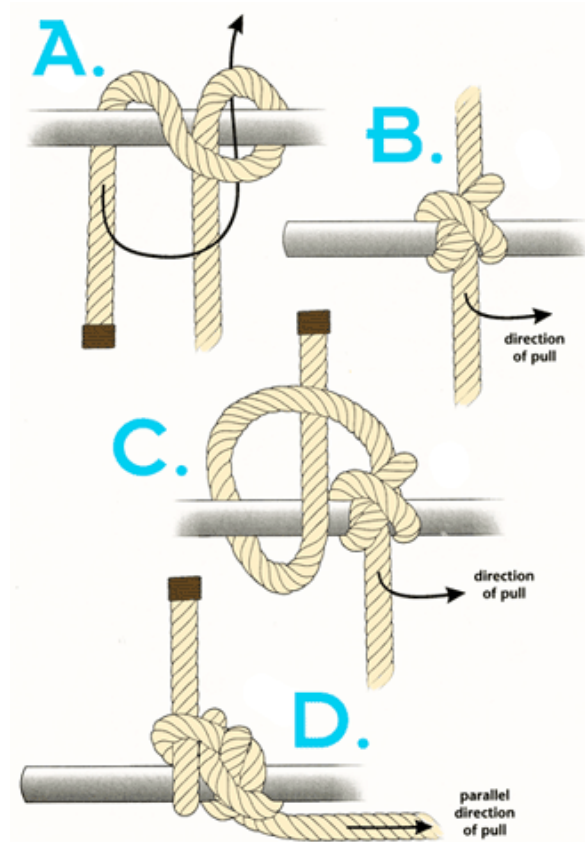
Make a turn around the object and bring the working end back over the standing part.

Continue around behind the object.

Pass the working end over the standing part and then under the riding turn and standing part, forming an overhand knot under a riding turn.

Be sure the ends emerge between the two turns as shown. Pull firmly on the ends to tighten.

WARNING: The Constrictor knot's severe bite, which makes it so effective, can damage or disfigure items it is tied around.



Double bowline

How to tie:

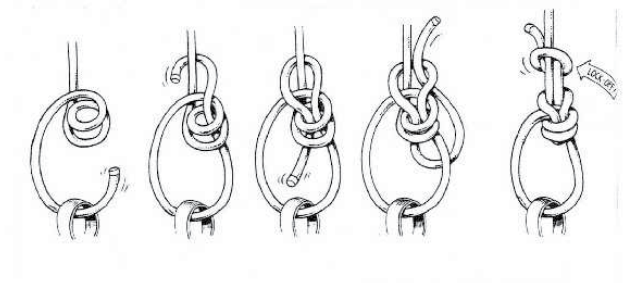
Make a loop with the running end crossing over the standing end.

Make a larger loop that passes over the first loop, again with the running end passing over the standing end.

Pass the running end through the first loop from the bottom.

Wrap the running end behind the standing end, and back down through the first loop.

Tighten

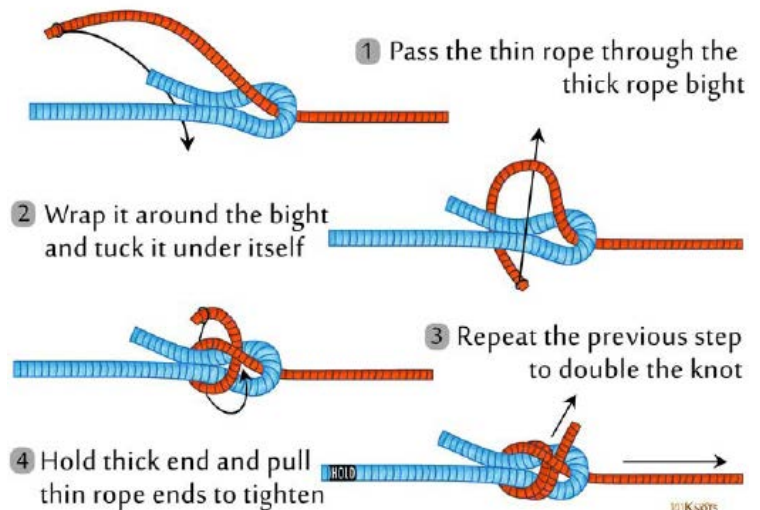


Double sheet bend

Use: The double sheet bend or double becket bend is a strong knot used to tie two ropes (usually of different thicknesses or rigidity) together. It is a doubled version of the sheet bend.

How to tie:

To tie the double sheet bend, start by making a bight in the larger line. Pass the working end of the smaller line up through the bight, around behind the bight, and beneath the loop in the smaller line (that's a sheet bend). Then once again, pass the working end along the same path, around behind the bight and beneath the loop in the smaller line.

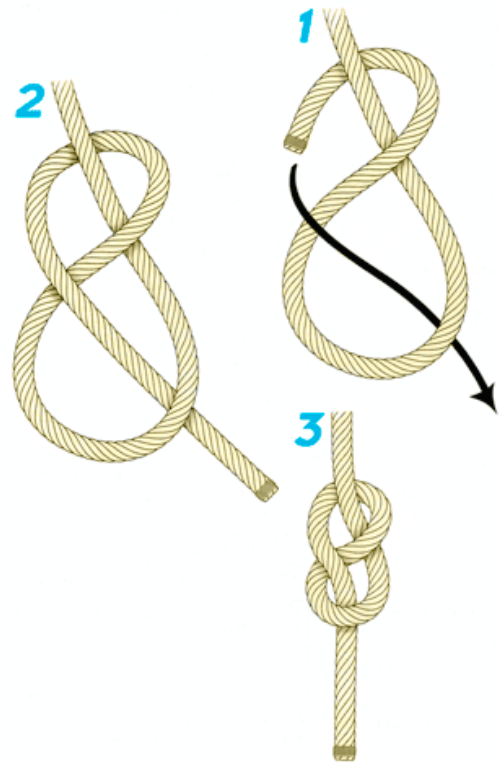


WARNING: As with the standard sheet bend, the two free ends should end up on the same side of the knot. If they do not, a left-handed double sheet bend results, which is much weaker.

Figure Eight

Use: This knot is ideal for keeping the end of a rope from running out of tackle or pulley.

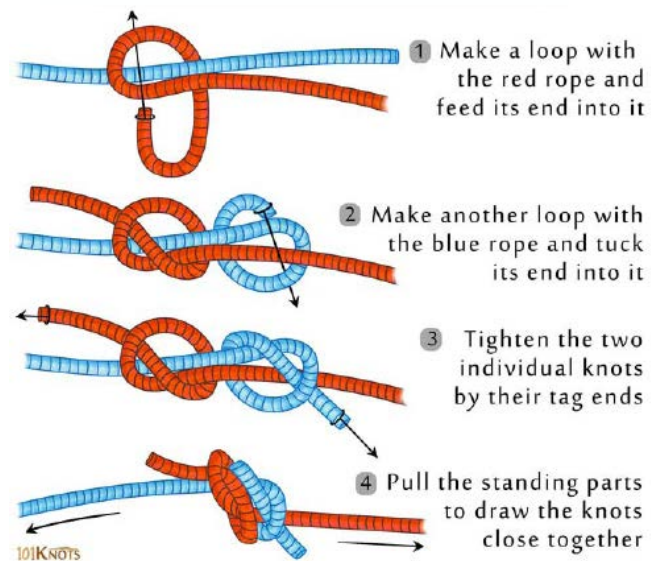
How to tie:
 Make underhand loop, bringing end around and over the standing part.
 Pass end under, then up through the loop.
 Draw up tight.



Fisherman's knot

Use: The Fisherman's knot is a specialized bend. It consists of two overhand knots wrapped around each other. It works well for joining thin, stiff, or slippery lines. It requires little dexterity to tie, so is often used in stubborn materials. When tightened, it becomes fairly compact, and the free ends can be cropped very close to the knot. These qualities make it very useful for fishing line—it is less likely to jam a fishing rod than many other bends, and is easier to tie with cold, wet hands.

How to tie:
 To tie the fisherman's knot, lay the two ends to be tied alongside each other and facing opposite ways. Tie an overhand knot on the first rope and pass the second rope through the loop formed. Tighten the overhand knot, to prevent the line inside it from flopping around. Then tie another overhand knot on the second rope with the first rope passing through it.



Fisherman's loop

Use: The fisherman's loop makes a non-slip loop at the end of a rope.

How to tie:
 This knot is the same as a fisherman's bend, except that instead of joining two ropes together, a single rope is doubled over and then joined to itself forming a loop.



Halter hitch, Hitching tie

Use: The halter hitch, sometimes called a hitching tie is used to tie the lead rope, which is attached to a horse's halter (or to a boat), to a post or hitching rail. The benefit of the halter hitch is that it can be released by pulling on one end of the rope. Even if there is tension on the horse-side of the rope it can still be released with ease.

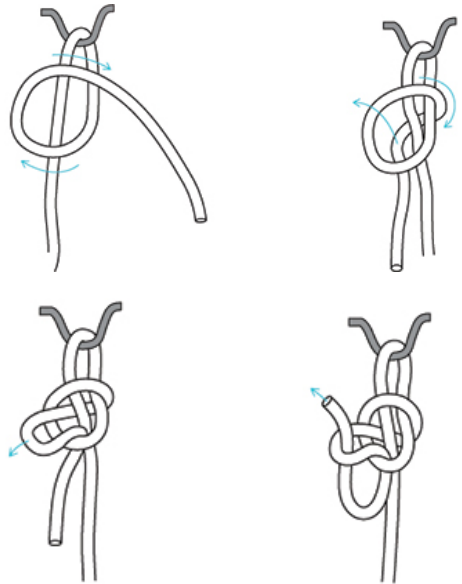
How to tie:

Pass the working end of the rope over the standing part.

Pass the working end behind the loop.

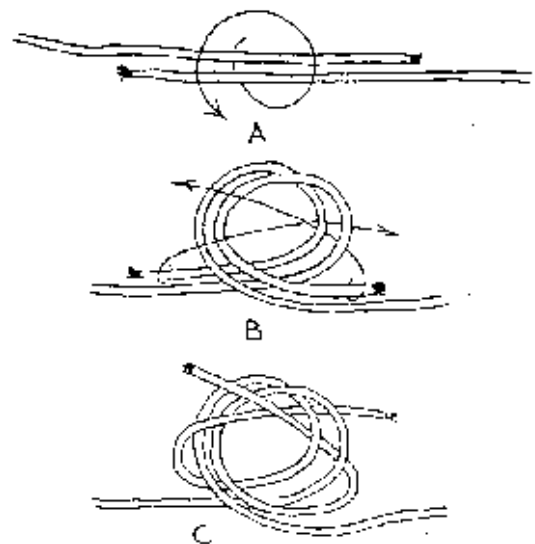
Create a bight in the working end of the rope. The bight is then passed in front of the main loop and into the second loop.

Tighten the hitch by pulling on the standing end and the bight. The hitch can be finished by passing the working end through the bight.



Hunter's bend

Use: The Hunter's bend (aka Rigger's bend) is used to join two lines. It consists of interlocking overhand knots, and can jam under moderate strain. Hunter's bend is one of the most recent knots to be discovered. It appeared on the front page of *The Times* in 1978 and was credited to Dr. Edward Hunter. Dr. Hunter used it for years to tie broken shoelaces before discovering its originality through a friend in the 1970s. When it appeared on the front page, it led to much publicity for the knot and also to the foundation of the International Guild of Knot Tyers. However, the knot was presented in *Knots for Mountaineering* by Phil Smith ca. 1956.



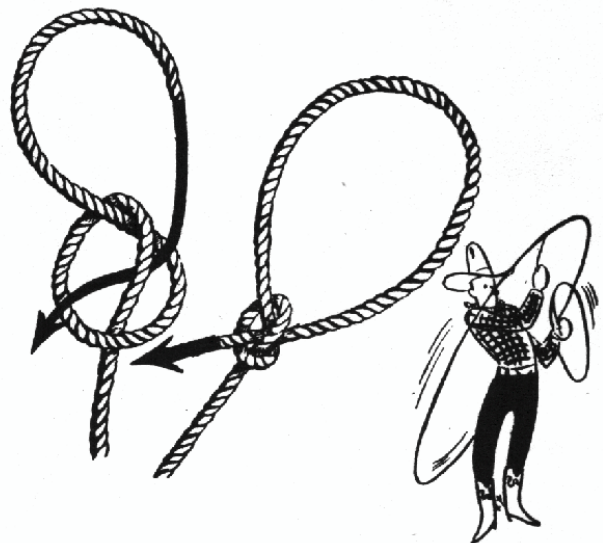
Lariat

Use: A lariat knot is the loop knot commonly used in a lasso. Its round shape, especially when tied in stiff rope, helps it slide freely along the rope it is tied around.

How to tie:

Place an overhand knot in the end of the rope.

Tie a second overhand knot, pass the rope end through it, and tighten.

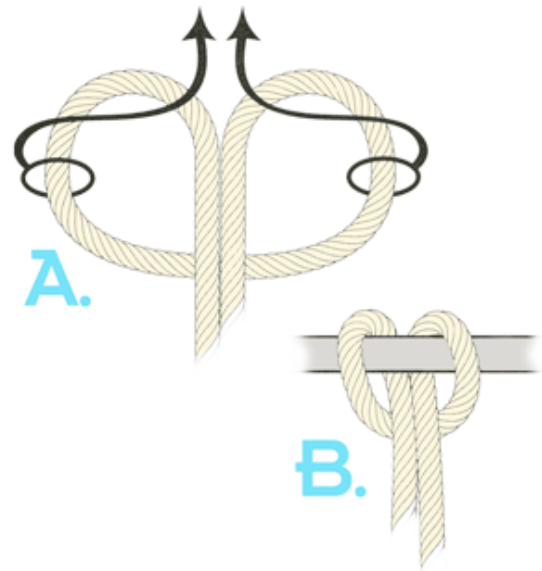




Lark's head

Use: The lark's head is a knot (specifically, a hitch). Also called a cow hitch, it comprises two half-hitches tied in opposing directions. The cow hitch is often used to connect loop-ended lanyards to handheld electronic equipment, since it can be tied without access to the ends of the fastening loop.

How to tie:
 When both the standing parts of the rope are available, the cow hitch can be tied in the following manner:
 Form a bight and pass it through the ring from the underneath.
 Pull the head of the bight downwards, and reach through it, grabbing both standing parts of the rope.
 Pull both standing parts of the rope through the bight.



Man harness knot

Use: The Man harness is a knot with a loop on the bight for non-critical purposes. This knot is used when multiple people are to pull a load. Typically one end of the rope is tied to a load, and one man harness knot per puller will be tied along its length. Each loop is then pulled by a different person.

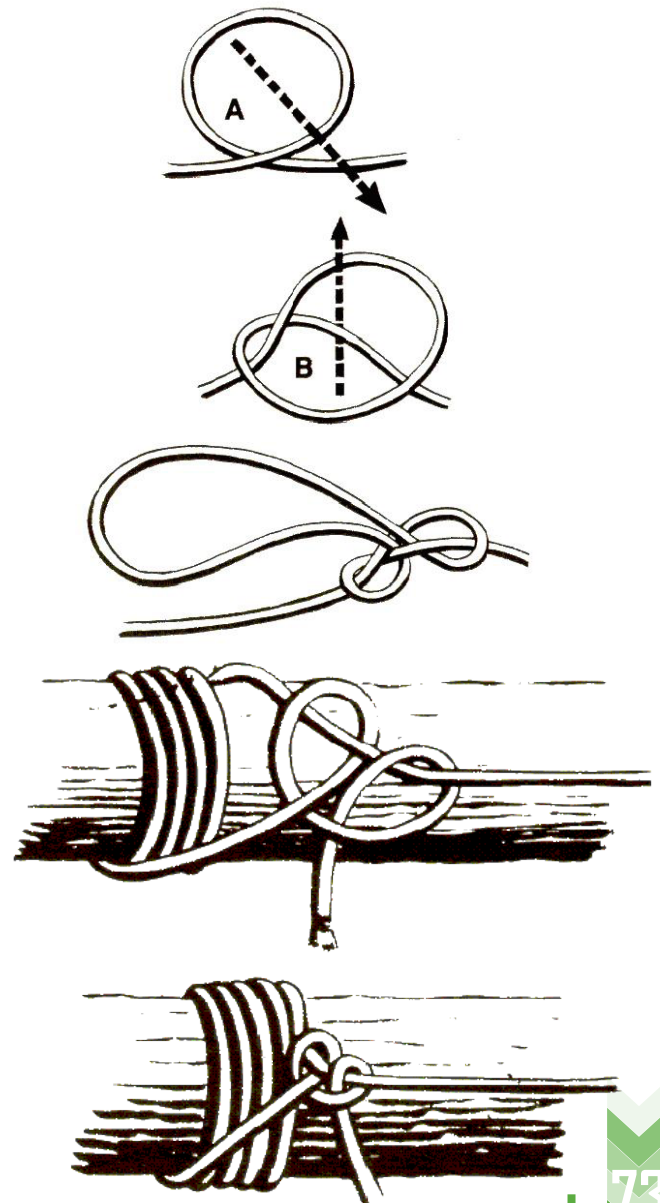
How to tie:
 Lay the rope flat
 Make a loop in the rope with the running end going beneath the standing part.
 Pull the running end down so that it crosses over the loop.
 Pull the bottom of the loop through the gap between the top of the loop and the running end.

WARNING: The Man harness knot must have the loop loaded or it will slip and contract easily.

Pipe hitch

Use: The pipe hitch is used for hoisting tubular objects (such as pipes).

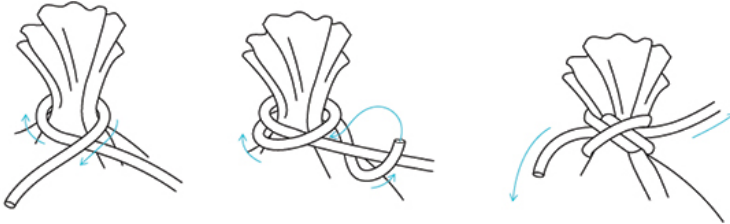
How to tie:
 Make four or five turns around the pipe with the rope.
 Bring the running end back to the standing part.
 Tie two half-hitches around the standing part.



Miller's knot

Use: A Miller's knot (also Sack knot or Bag knot) is a binding knot used to secure the opening of a sack or bag. Historically, large sacks often contained grains; thus the association of these knots with the miller's trade. Several knots are known interchangeably by these three names. Several variations are shown here.

This is another depiction of the knot shown above.



Millers-Knot-ABOK-1242.jpg

This knot is also a useful hitch and is known by the name Ground-line hitch when used for that purpose. This variation is noted as having better binding characteristics than the others.



Packer's knot

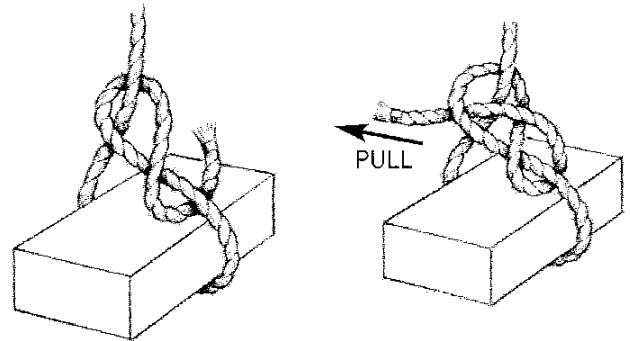
Use: The Packer's Knot is a binding knot usually used in smaller line. This knot is sometimes used in baling and in parcel tying.

How to tie:

Make a figure eight not near the standing end of the rope. Wrap the running end around the "parcel" and pass it through the top loop of the "eight" following the same path as standing end.

Make a loop in the running end and pass the standing end through it.

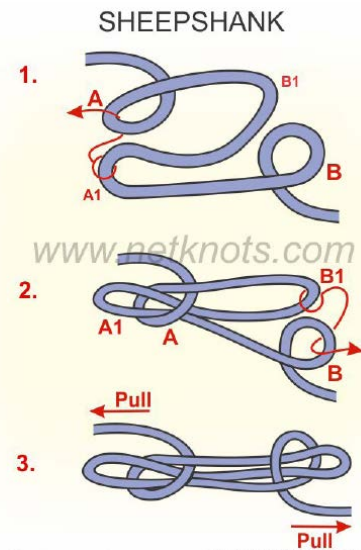
Tighten.



Sheepshank

Use: The sheepshank knot is used to shorten a length of rope. It comes undone easily unless it is under tension.

WARNING: Keep this knot under tension or it will come untied.



Sheetbend

Use: The sheet bend knot is excellent for joining two ropes together, especially if the two ropes are not the same size. When tied properly, it will not come undone, and it is easy to untie. It is very similar to the bowline.

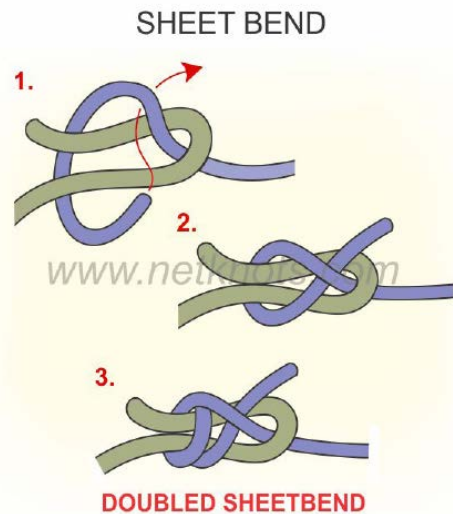
How to tie:

Make a bight at the end of the larger rope (if they are not the same size).

Run the end of the smaller rope through the bight, entering from the bottom.

Wrap the end of small rope around the back of the large rope, crossing the short end of the large rope first.

Tuck the end of the short rope under itself, on top of the bight.



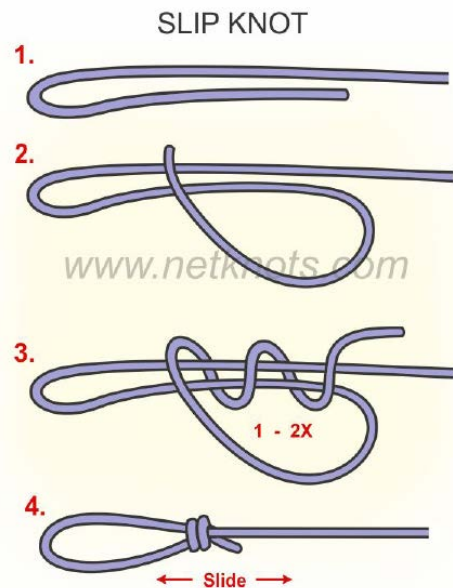
Slip knot

Use: A slip knot is one that will tighten under load, and which can be easily untied by pulling on the running end. This knot is typically a component of more complicated knots, and is generally not used by itself.

How to tie:

A slip knot can be tied by starting an overhand knot, but instead of passing the running end through the loop, pass a bight through instead.

WARNING: If tied as shown in the illustration, the running end (on the right) will pull through the loop if even the slightest load is applied to the standing end (on the left). If one reverses the standing end and running ends in the illustration, the knot is far more stable. As shown, the knot will hold a load on the running end, but not on the standing end.

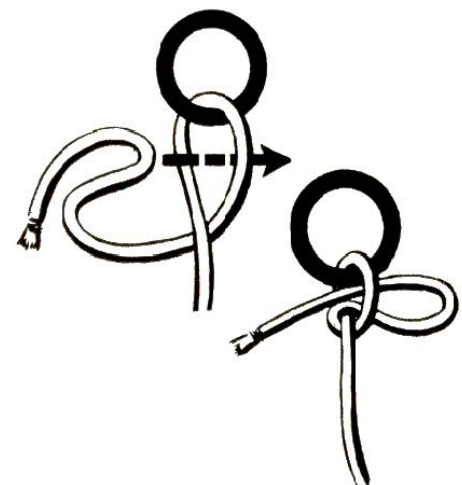


Slipped half-hitch

Use: A slipped half-hitch is a knot used to attach a line to a rod or bar. It does not provide great strength compared to some other knots, but it can be tied relatively quickly and released very easily. These characteristics mean that it is used on square-rigged ships for securing the gaskets that bind stowed sails to the yards.

How to tie:

Begin as for a clove hitch, but instead of passing the end of the line through the loop in the final step, pass a bight instead, leaving the end on the original side. Pulling on this end will release the hitch - if tied in a gasket, this will quickly release the sail.



WARNING: Never use this knot in a critical situation. It comes untied at the slightest provocation.

Slipped sheet bend

Use: The slipped sheet bend is used in non-critical situations for temporarily joining two ropes.

How to tie:

Start the same as in tying a regular sheet bend, only pass a bight (light blue in the illustration) under the last rope (dark blue) instead of passing the running end under.

WARNING: The slightest tug on the running end will untie this knot instantly - even if the knot is under load.

Square Knot

Use: Also known as a Reef knot, the Square Knot is easily learned and useful for many situations. It is most commonly used to tie two lines together at the ends. This knot is used at sea in reefing and furling sails. It is used in first aid to tie off a bandage or a sling because the knot lies flat.

How to tie:

Pass left end over and under right end.

Curve what is now the left end toward the right and cross what is now the right end over and under the left.

Draw up tight by pulling one end and line away from the other end and line.

WARNING: Do not rely on this knot to hold weight in a life or death situation. It has been known to fail.

Stevedore knot

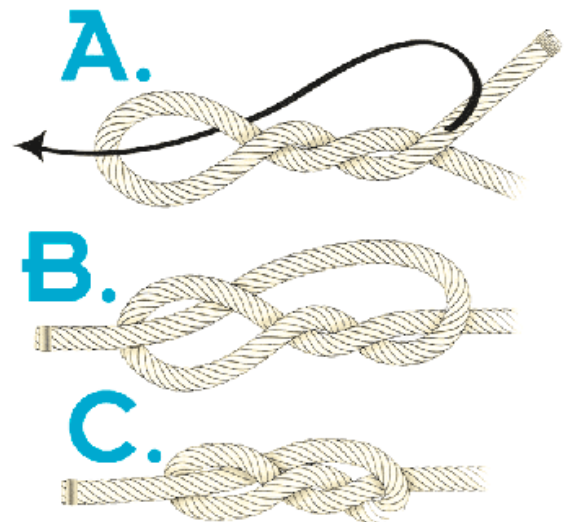
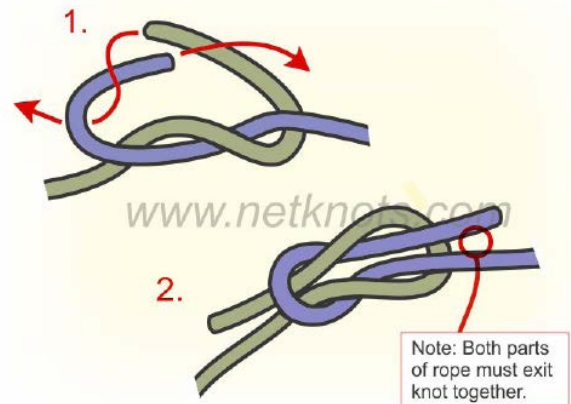
Use: The Stevedore knot is a stopper knot, often tied near the end of a rope. It is more bulky and less prone to jamming than the closely related figure-eight knot. This knot is excellent for anchoring a tarp. Pass the end of the rope through a tarp's grommet, tie a stevedore, and anchor the other end with a taut-line hitch. Its added bulk prevents it from pulling through the grommet.

How to tie:

The knot is formed by following the steps to make a figure-eight knot, but the working end makes an additional round turn around the standing part before the end passes back through the initial loop.

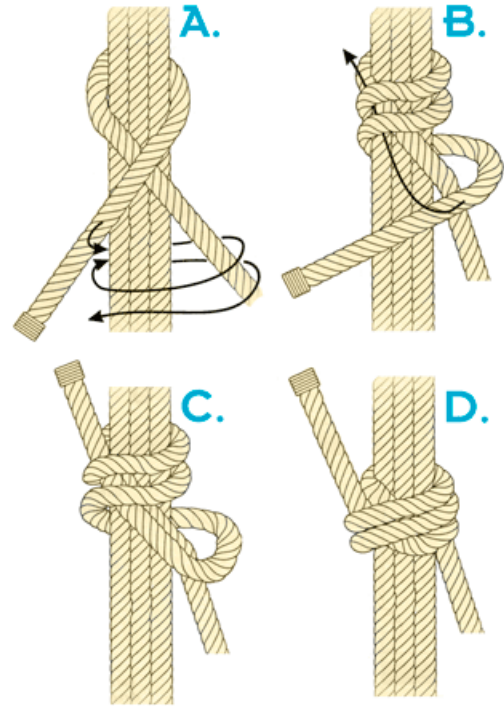


SQUARE KNOT



Strangle knot

Use: The Strangle knot is a simple binding knot. Similar to the constrictor knot, it also features an overhand knot under a riding turn. The difference is that the ends emerge at the outside edges, rather than between the turns as for a constrictor. This knot is actually a rear-ranged double overhand knot and makes up each half of the double fisherman's knot. When tightened, it is very slip-resistant. It is ideal for constructing a pilot ladder (like a rope ladder, but with wooden rungs).



Taut-line hitch

Use: The Taut-Line Hitch is an adjustable loop knot for use on lines under tension. It is useful when the length of a line will need to be periodically adjusted in order to maintain tension. It is made by tying a Rolling hitch around the standing part after passing around an anchor object. Tension is maintained by sliding the hitch to adjust size of the loop, thus changing the effective length of the standing part without retying the knot. When under tension, however, the knot will grip the cord and will be difficult to cause to slip.

It is typically used for securing tent lines in outdoor activities involving camping, by arborists when climbing trees, for creating adjustable moorings in tidal areas, and to secure loads on vehicles. A versatile knot, the Taut-line hitch was even used by astronauts during STS-82, the second Space Shuttle mission to repair the Hubble Space Telescope.

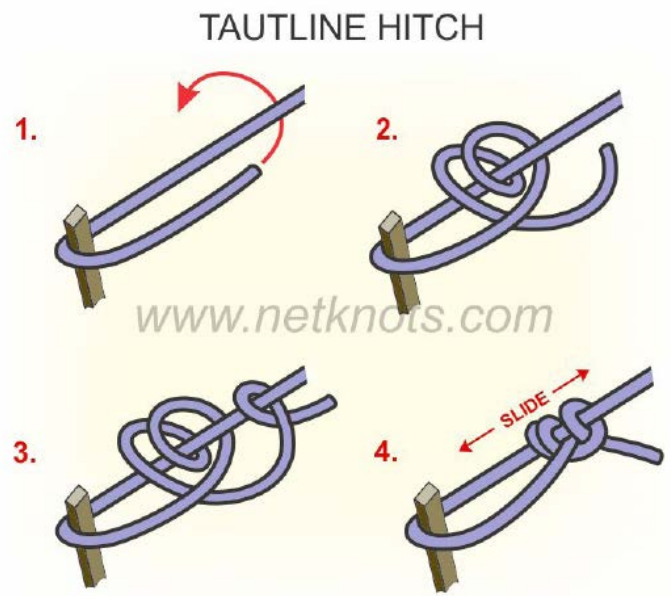
How to tie:

Pass the working end around the anchor object. Bring it back along side of the standing part and make a half-hitch around the standing part.

Continue with another wrap inside the loop, effectively making a round turn around the standing part.

Complete with a half-hitch outside the loop, made in the same direction as the first two wraps, as for a clove hitch.

Dress by snugging the hitch firmly around the standing part. Load slowly and adjust as necessary.



Surgeon's knot

Use: The surgeon's knot is similar to a square knot, except that the first stage is doubled. This helps the knot stay tight while it is being tied.

Timber hitch

Use: The timber hitch is a knot used to attach a single length of rope to a piece of wood. This knot is easily undone after use.

How to tie:

To make the knot, pass the rope completely around the wood.

Pass the running end around the standing part, then through the loop that you have just formed.

Make three turns around the loop then pull on the standing part to tighten.

Take care that you double the rope back on itself before making the three turns, or it won't hold.

Three are recommended for natural rope such as jute, whereas five turns are needed on synthetic rope like nylon.

This knot is also known as the Bowyer's Knot as it is used to attach the lower end of the bowstring to the bottom limb on an English Longbow.

Two half hitches

Use: This reliable knot is quickly tied and is the hitch most often used in mooring.

How to tie:

Pass end of rope around post or other object.

Wrap short end of rope under and over long part of rope, pushing the end down through the loop. This is a half hitch.

Repeat on long rope below first half hitch and draw up tight.

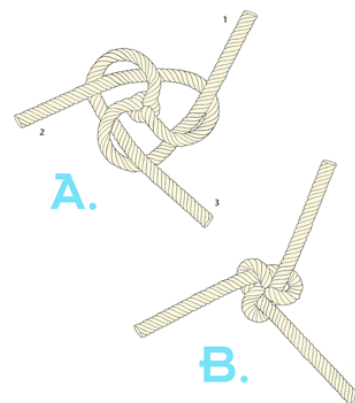
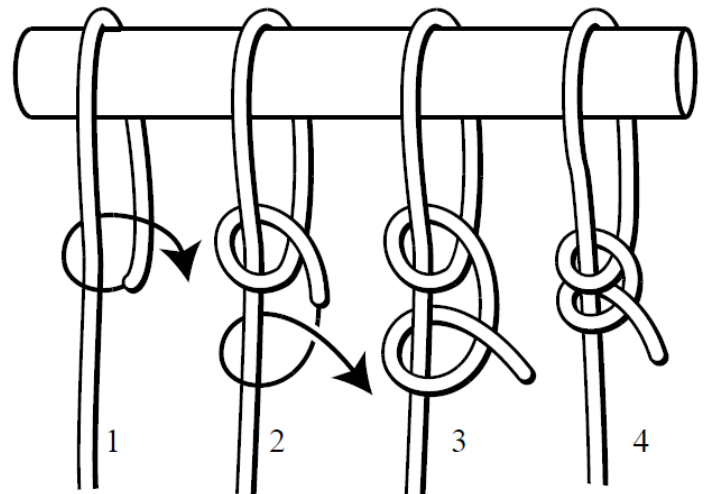
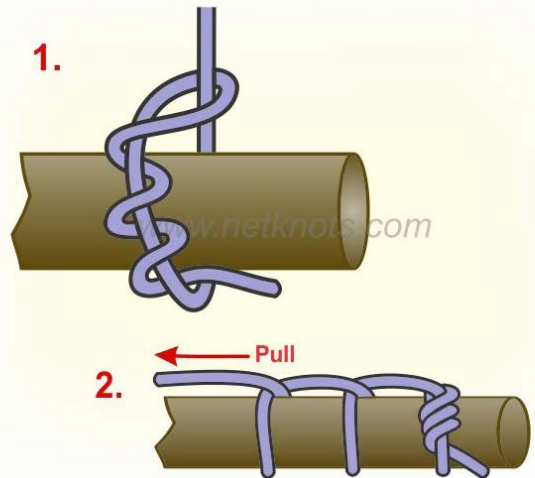
Crown Knot

Use: Used a component in a back splice and in the double crown knot. Can be used to temporarily prevent the ends of a laid rope from unraveling.

How to tie:

Make a constriction around the rope about 7.5 cm/3 inches from the end. You can constrict it by tying a constrictor knot around the rope with a bit of twine, or you can tape it.

Unravel the end of the rope all the way to the constriction.





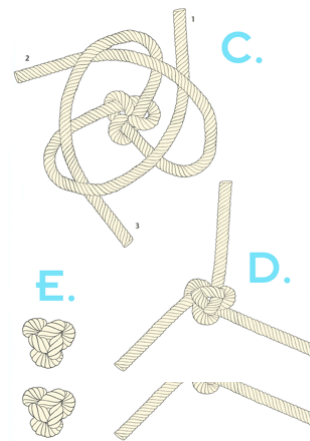
Bind the ends of the strands with tape to keep them from unraveling.

Double one strand (strand A) over itself and lay it between the other two (strands B and C), leaving a loop in its center.

Pull strand B over the end of strand A and lay it between strands A and C.

Pass strand C through the loop made in strand A.

Tighten all three strands carefully.



Prusik knot

Use: A Prusik (aka Prussik or Prussic) is a friction hitch used in climbing, canyoneering, caving, rope rescue and by arborists to grab a rope (sometimes referred to as a rope-grab). The term Prusik is used both for the knot, for the loops of cord, and for the action (to prusik).

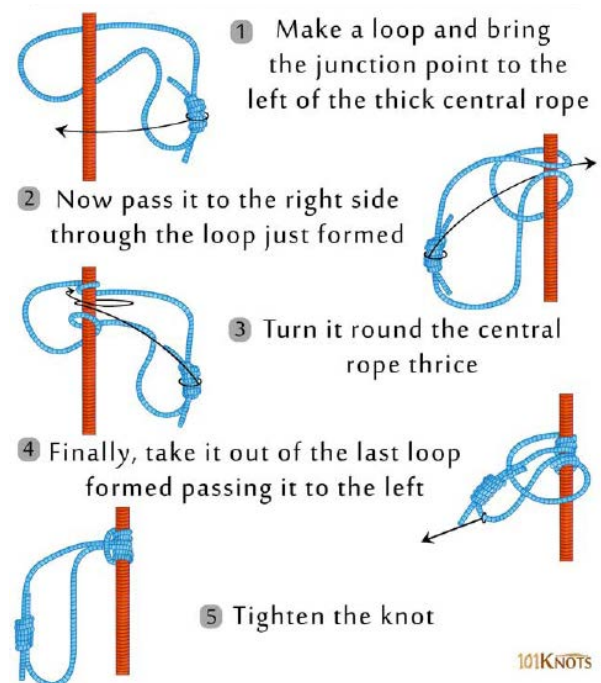
A Prusik rope is a circular loop with a circumference of 20 to 100 cm (8-40 inches depending on its intended use). Two Prusik ropes are tied to another rope which is anchored above. When the Prusik knot is under tension, it grabs the rope to which it is tied. When not under tension, it is easily moved. The climber places one foot into each loop, and shifts all of his or her weight to one of them, releasing the tension on the other. The rope without tension is then slid upwards on the vertical rope. The climber then shifts his or her weight to the other loop and slides the first one up. This is repeated until the rope has been ascended. Prusiks will work around two ropes, even two ropes of different diameters. Prusiks provide a high-strength and relatively fail-safe (i.e., they will slip before damaging the rope or breaking) attachment, and are used in some rope-rescue techniques. Prusiks are good to use in hauling systems where multiple rope-grabs may be needed, and where mechanical rope-grabs are not available.

Although the Prusik Climb technique may be called old-school by some, the US Army still includes it in its annual Best Ranger competition. Rangers in the competition routinely make it up a 90 foot rope in under a minute.

How to tie:

The Prusik is tied by wrapping the prusik loop around the rope a number of times (depending on the ma-

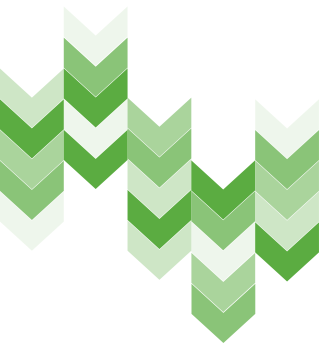
terials, but usually 3-5 times), and then back through itself, forming a barrel around the rope, with a tail hanging out the middle. When the tail is weighted the turns tighten around the main rope and grab. When weight is removed the loop can be slid along the rope by placing a hand directly on the barrel and pushing. The trick is, if it grabs well, then it is hard to slide along the rope. Breaking the Prusik free from the rope after it has been weighted can be difficult, and is easiest done by pushing the bow, being the loop of cord which runs from the top wrap, over the knot to the bottom wrap, along the tail a little. This loosens the grip of the hitch and makes movement easier.



101KNOTS



**Something for you
to help**





Pathfinder Pledge & Law

The Pathfinder Pledge & Law is an important part of Pathfinders. Thousands of Pathfinders each year learn and choose to abide by the requirements of the Pathfinder Pledge and Law for the sole purpose of growing closer to their fellow men and women, and to their Creator.

Explanation – Pathfinder Pledge

By the grace of God

Only as we rely on God to help us can we do His will.

I will be pure

I will fill my mind with everything that is right and true and spend my time in activities that will build a strong, clean character.

I will be kind

I will be considerate and kind, not only to my fellow man, but also to all of God's creation.

I will be true.

will be honest and upright in study, work and play and can always be counted upon to do my very best.

I will keep the Pathfinder Law.

I will seek to understand the meaning of the Law and will strive to live up to it's spirit, realizing that obedience to law is essential in any organization

I will be a servant to God

I will pledge myself to serve God first, last, and best in everything I am called upon to be or do.

I will be a friend to man.

I will live to bless others and do unto them as I would have them do unto me.

Explanation – Pathfinder Law

Keep the Morning Watch.

I will have prayer and personal bible study each day.

Do my honest part.

By the power of God I will help others, and do my duty and my honest share, wherever I may be.

Care for my body

I will be temperate in all things and strive to reach a higher standard of physical fitness.

Keep a level eye.

I will not lie, cheat or deceive, and will despise dirty talk or evil thinking.

Be courteous and obedient.

I will be kind and thoughtful of others, reflecting the love of Jesus in all my association with others.

Walk softly in the sanctuary.

In any devotional exercise I will be quiet, careful and reverent.

Keep a song in my heart

I will be cheerful and happy and let the influence of my life be as sunshine to others.

Go on God's errands.

I will always be ready to share my faith and go about doing good as Jesus did.

Meaning of the Pathfinder Club Emblem

Red (Sacrifice)

Reminds us of Christ. "For God so loved the world, that he gave his only begotten Son, that whosoever believeth in him should not perish, but have everlasting life." (John 3:16)

"Present your bodies a living sacrifice, holy, acceptable unto God" (Rom. 12: 1).



Gold (Excellence)

"I counsel thee to buy of me gold tried in the fire, that thou mayest be rich" (Rev. 3:18).
Standard of measurement. The Pathfinder Club has high standards to help build strong character for the kingdom of heaven.

White (Purity)

"He that overcometh, the same shall be clothed in white raiment" (Rev. 3:5).
We desire to have the purity and righteousness of Christ's life in our lives.

Blue (Loyalty)

It is the purpose of the Pathfinder Club to help teach us to be loyal to: Our God in heaven. Our parents. Our church. Loyalty is defined as a reflection of the character of our True Master Guide.

Pathfinder Club

The Pathfinder Club is one of the organizations of the world youth ministry of the Seventh-day Adventist Church.

Shield (Protection)

In the Scripture God is often called the shield of His people. (Protection) "Fear not... I am thy shield" (Gen. 15:1)
"Above all, taking the shield of faith, wherewith ye shall be able to quench all the fiery darts of the wicked." (Eph. 6:16)

Sword (Bible)

The sword is used in warfare. A battle is always won by offense. We are in a battle against sin, and our weapon is the Word of God. The sword of the Spirit is the Word of God. (see Eph. 6:17)

Three sides

Completeness of the Trinity – Father, Son, Holy Spirit.
Tripod of education: Mental Crafts and Honors Physical Campouts, work bee, health focus Spiritual Outreach and personal spiritual development.

Inverted Triangle

The inverted order of importance Jesus taught which is contrary to that taught by the world.
Sacrificing of one's self by placing the needs of others ahead of our own.



Missionaries who served during the Seventh-day Adventist mission expansion (1900 to 1950).

RUSSIA:

Due to political restrictions by the Tzar, many Adventists in Russia moved to Siberia in the **1890s**. In 1908, **K. A. Reifschneider**, a German pastor from **Pyatigorsk in the Caucasus**, arrived in **Siberia** to minister. He established a base of operations in **Omsk**, and traveled by sleigh across Siberia.

CENTRAL AMERICA AND CARIBBEAN:

W.A. Sweany traveled to the **Bahamas** as a full-time missionary in **1909**, establishing the first church at Nassau in 1911. In **1915**, **John L. Brown** traveled to **El Salvador**, initially selling books, but in 1916 he led his first public meetings, resulting in 14 baptisms and the establishment of a church in San Salvador.

MIDDLE EAST:

The first Adventist missionaries to **Persia** were **F. F. Oster** and **Henry Dirksen**, arriving in **1911** and joined by **Mrs. Oster** in 1913. German missionaries **O. Staubert** and his wife met up with them in 1913, but because they were German citizens, they were forced to flee in 1914 during World War I. The Stauberts were separated, and could not find one another for a full year, when they were reunited in Germany. Prior to the war, Oster had also taken the message by horseback to

Turkestan.

NORTHEAST ASIA:

Early Adventist missionaries to China included **Edwin H. Wilbur** & his wife, who arrived in December **1902** and Danish-born **Jacob Nelson Anderson** and his first wife, Emma Thompson Anderson, who, along with their three children, served in **China** from **1902-1909**. In **1904**, **Timothy Tay**, a Chinese baptized in **Singapore**, became the first native Chinese missionary to enter China. In **1908**, **Dr. Riley Russell** began the medical missionary work in **Korea**, and established the Soonan Dispensary Hospital. **F. A. Allum** and his wife and children, along with **M. C. Warren** and his wife and daughter, traveled by houseboat to **Sichuan** and **Congqing China** in **1914** to open the mission field there.

SOUTHEAST ASIA:

The first Adventist missionaries to Southeast Asia were **Ralph Minson** and his wife, who arrived in **Sumatra** in January **1900**. In **1905**, **R. A. Caldwell** arrived in the **Philippines**. **Fred L. Pickett** was the first Adventist missionary to enter **Cambodia**, in **1930**. He was not allowed to build a church there, so he built one at Tinh Bien in neighboring Cochin China for his Cambodian converts.

PACIFIC ISLANDS:

The first Adventist mission in **Papua New Guinea** was established by **Septimus W. Carr** and **Peni Tavodi**, a Fijian teacher, in **1908**. In **1924**, **R. H. Tutty**, along with **Nano** and **Rongapitu**, from the Solomon Islands, were first Adventist missionaries to **Bougainville** (one of the islands of New Guinea). **Albert Henry Piper** and his wife **Hester Elizabeth Newcombe**, called Hettie by her friends, were the first Australasia Adventist missionaries into the **Pacific Islands**, heading to **Rarotonga** in **1900**. **John Howse** and his family traveled to **Kiribati** and **Tuvalu Islands**, via **Fiji**, in **1947**. These islands were reached late among others in the Pacific by the Adventist message, and the work was difficult.

AFRICA:

F. B. Armitage and his wife traveled 150 miles from the **Solusi** mission in **South Africa** to establish the Somabula Mission in 1901. During their first Sabbath at the new mission, they prayed for God to help them find someone seeking the truth. Outside their door, a native boy arrived, who told them he had had a dream that their house was where he could learn about the words of the true God. He asked them to share, and they were happy to do so. Two years after establishing the mission, they

held their first baptisms. In **1906**, **A. A. Carscallen**, from England, along with **J. D. Baker** and **B. L. Morse**, began Adventist mission work in **British East Africa**, establishing their main base of operations at **Gendia, Kisumu, Kenya**. **Dr. F. W. Vasenius** and **V. E. Toppenberg** arrived in **Africa** in **1909** to establish the first Adventist mission for **Ethiopians**. In **1921**, Toppenberg was able to enter Ethiopia itself, and established a mission near **Addis Ababa**. **D. E. Delhove** expanded the Adventist mission into **Dutch East Africa** in **1919**. World War I saw many Germans held prisoner by the British in East Africa, including many Seventh-day Adventists. The Danish missionary **V. E. Toppenberg** remained in the area until **1917**, but after two years in America, he traveled to Ethiopia to take the Adventist

message there. In **1935 A. F. Raposo** brought the Adventist message to **Cape Verde**, baptizing 15 people in **1936**.

SOUTH AMERICA:

Ferdinand Anthony Stahl and his wife Anna traveled as missionaries to **LaPaz, Bolivia** in **1909**. In **1911** they moved to the other side of **Lake Titicaca in Peru**, taking the Adventist message to the Aymara and Quechua Indians. The Stahls established several schools, teaching the indians to read and write. In **1920**, the Stahls relocated to the headwaters of the **Amazon**, establishing the Metraro Mission Station and using a steam launch to travel the rivers. In **1929 Elder and Mrs. L. B. Halliwell** were called to the the mission field in **Northern Brazil**, along the Amazon River. In order to reach the peoples, the Halliwells decided to use

home-visits and medical missions, and called on the young people of North America to raise funds for a motor launch. The \$4000 was raised by 1931, and the **Luzeiro** (Light Bearer), a 30 foot long 10 foot wide diesel-powered motor launch entered service.



Complete the Christian Grooming & Manners Honor

1. What well-balanced combination of strengths did Jesus develop as a growing youth? (Luke 2:52)

“And Jesus grew in wisdom and stature, and in favor with God and men”.

This verse indicates that Jesus grew mentally (wisdom) as well as physically (stature). He also grew spiritually (in favor with God) and emotionally (in favor with men).

These four aspects of personal growth are the focus of the Adventist education system as well as the Pathfinder program.

2. According to Psalm 8 what estimate does God place on your personal worth?

This is saying that God sees man as the crowning (most significant) act of His creation. He made us a little lower than the angels in importance and gave us the charge to rule and manage the rest of his creation.

3. Are names important to God? Does He know your name? (Isaiah 43:1, Exodus 33:17, Isaiah 45:4)

Names are important enough to God that He has protected His own name in the Ten Commandments. He knows each of us by name which also signifies His personal interest us individually.

5. If you want to use your gift of speech to God’s glory, what should your prayer be? (Psalm 19:14)

May the words of my mouth and the meditation of my heart be pleasing in your sight,
O LORD, my Rock and my Redeemer.

11. Know the importance of daily “soul-grooming” and of building a Christian character and why “belonging to Christ” makes a difference in the way you dress and act.

“Soul-grooming” is done through daily communion

with God. Any relationship is built by communication, and we communicate with God through prayer and by reading His Word. It is best to start the day by talking to the Lord, asking Him to be with you through the day. Time spent praying over specific temptations you face will better prepare you to resist that temptation.

“Christian character” is demonstrated when you do the right thing even when it is difficult. Be in the practice of always telling the truth, and put the feelings of others ahead of your own desires. This will add compassion to your character.

Knowing that you belong to Christ will give you a sense of self-worth and confidence. After all, Christ died for you, so He must feel you were worth that sacrifice. Because He has forgiven you of your sins, you will want to treat His other children with love and respect. You will find yourself wanting to lead others to Him, and help them resist temptation.

People go through several important physiological changes during the pre-teen and teen years. They find that their sexual desires begin to waken, and sometimes they may find them difficult to control.

Dressing modestly will help others to control these desires, while dressing suggestively and engaging in flirtation can unnecessarily excite a person of the opposite sex. When you belong to Christ, you will not willingly become a stumbling block to another person’s salvation.

You will find your self-worth anchored in being a child of the King rather than through gaining the attention and acceptance of other people.

15. List ten principles to help you overcome self-consciousness and social embarrassment.

The most important thing for a Christian to remember is that no matter how awkward they are, the Ruler of the Universe loves them and gave His life for them.

Spend some time preparing for a social event. Make sure you are clean, your hair is clean, and combed, and your breath is fresh. Put on a clean set of clothes

before setting out, and wear deodorant or antiperspirant. Antiperspirant will keep you from sweating. Deodorant will keep your sweat from smelling bad.

It also helps to recognize that you are not the only person who may feel self-conscious in a social situation. Every other boy and girl your age will also be worrying about doing something goofy, so the chances are pretty good that if you make an embarrassing error, everyone else will be so preoccupied with themselves that they do not notice.

Still, sometimes you will do something embarrassing, and others will notice. In this case, it is best to acknowledge your fault, admit embarrassment, and try to see the humor in the situation. That can be very hard in the heat of the moment, but if you can pull it off with grace, people will be quick to forgive, and they will not think poorly of you.

So here are ten principles to remember:

1. Christ died for you
2. Make sure your hair is clean and combed.
3. Make sure your face and body are clean
4. Wear deodorant/antiperspirant.
5. Brush your teeth and have a breath mint or sugar-free gum
6. You are not the only self-conscious person
7. People are unlikely to be focusing on you
8. Admit your mistakes
9. Admit your embarrassment



A little humor goes a long way



4. Demonstrate or discuss proper conversational skills, including:

a. The proper way to talk to older people in public

Children should address adults using the words Mr, Mrs, and Miss outside of church, or Brother, Sister in a church setting followed by that person's last name. They should avoid using an adult's first name unless it is also used with a last name. For example, "I talked to John about borrowing his tools," would be considered disrespectful, but saying "I talked to John Smith about borrowing his tools" or "I talked to Mr. Smith about borrowing his tools" shows proper respect. When speaking to an adult (or anyone else), do not mumble. Avoid slang. Be sure to use such words as "sir," "ma'am," "please," and "thank you." Make eye contact.

b. How to address people and make proper introductions

When addressing adults, again it is respectful to use their last names, as in "Mr Smith" or "Miss Jones." When making introductions, say a woman's name before a man's. If they are both the same sex, use the older person's name before using younger person's. For example, you would introduce Mr. Smith and Miss Jones by saying "Miss Jones, I would like for you to meet Mr. Smith." Be sure to allow room so that they may shake hands. You would introduce Mr. Smith to your friend William by saying "Mr. Smith, this is my friend William." You may then tell something about William: "William and I have known each other since the third grade."

c. Questions to avoid

Do not comment on any physical defects in a person, or ask personal questions:

- "When last did you have a shower?"
- "Don't you think you should try to lose a little weight?"
- "How much money do you make?"
- "How old are you?" – Speaking to someone your senior
- How is your mother?

d. How to think of pleasant things to say

- Think of something that has happened to you in the recent past that you found pleasant and talk about that.
- When talking to adults with children or grandchildren, ask about them.
- Ask where the person grew up and what it was like there.

- Ask if the person has a pet, and if so, what that pet's favorite thing to do is.
- Tell about a recent Pathfinder event, such as a campout or club meeting.
- Tell about an honor that you have enjoyed earning, and what you had to do to earn it.

e. How to show concern for the feelings of others

One way to show concern for others during a conversation is to practice active listening. In active listening, you restate what the other person has said to you, but in different words. If you misunderstand what was said and restate it incorrectly, your partner in conversation will know and can clarify. Active listening is one way to let the other person know that you are indeed listening.

One mistake that people often make in conversing is changing the subject before the partner was ready to. For example:

Bad Form

Alice: "My sister was in a car accident yesterday."

Bob: "That's too bad. Did I tell you I beat level 14 in 'Mega Chipmunk Death Rally' this morning?"

Alice: "She broke her finger"

Bob: "I don't care at all"

Better Form

Alice: "My sister was in a car accident yesterday."

Bob: "Your sister was in an accident? Is she OK?"

Alice: "She broke her finger."

Bob: "I hope her finger heals soon."

It is also important to show concern for the person before considering other ramifications:

Bad Form

Alice: "My sister was in a car accident yesterday."

Bob: "Really? She still owes me five bucks!"

Alice: "She broke her finger"

Bob: Hahaha that's funny!"

Better Form

Alice: "My sister was in a car accident yesterday."

Bob: "I'm sorry to hear that. Did she have to go to the hospital?"

f. What to say when you answer the door

When answering the door, if the visitor has come to speak to an adult in the family and he is known to you, invite him in while you get the person requested. If the visitor is unknown, kindly ask him to wait until you can get the person requested. If no one else is home, tell the visitor so only if you know the visitor, and ask if you can relay a message for him.

g. How to answer the telephone correctly

When answering the phone at home, nothing beats this old classic: "Hello?" It is also good to say after this greeting the period of day, that is:

12:00 AM – 11:59 AM Morning

12:00 PM – 5:59 PM Afternoon

6:00 PM – 8:59 PM Evening

9:00 PM – 11:59 PM Night

There is no need to give out personal information by saying "Anthony residence, this is Susan," nor do you need to tell them the number they have just dialed. A simple "Hello" is all you really need.

Bad Form: "What!"

Good Form: "Hello"

When answering for a business, the rules change. In this case, you are expected to answer with the name of the company, as in "Space-ly Sprockets, how may I help you?"

If you ever need to answer the phone at your church, you should answer the same as if it were a business: "Northside SDA Church, how may I help you?". You needn't say your name, unless the person on the other end of the line asks to whom he/she is speaking.



7. Give two reasons why physical fitness is important. Explain the relationship between proper diet, exercise, and weight control.

Exercise keeps your organs functioning properly, avoiding blockages and poor circulation. A healthy diet is also important for weight control. Excessive weight will cause diseases.

On average, the number of calories you consume should equal the number of calories you burn. Calories enter the body through the things we eat and drink - in other words, from the diet. Calories are burned by physical activity. The more physically active you are, the more calories you will burn.

If you consume more calories than you burn, you will gain weight. If you burn more calories than you consume, you will lose weight. If your caloric intake equals your caloric expenditure, you will maintain your current weight. This applies no matter what your weight is. There is no weight beyond which a person cannot get any heavier (unless the excess weight results in death, as it often does).

8. Tell the importance of proper grooming, including bathing, body hygiene, breath, proper care of clothes, shoes, etc.

Importance

A person with poor hygiene is unpleasant to be around. Foul odors, dirty clothing, and gross things stuck between their teeth have a tendency to drive people away. Most people will not take a habitually unclean person seriously, and will instead do everything they can to avoid that person. It is very difficult to be an effective witness for your faith under these conditions.

Social cues

Be on the lookout for social cues that indicate you may have a problem. If someone is continually averting their eyes from you, or you find them staring at some part of your face other than your eyes, discreetly excuse yourself and have a look in a mirror. Check your teeth, and make sure your face is clean.

If a person offers you a piece of gum or a breath mint, it may be a polite way of curing your bad breath. The proper response is "Thank you." Accept the breath freshener without asking why it was being offered.

Perhaps you'd rather not know!

9. Describe the proper way to wash your hair and care for your "hair tools."



Wet your hair thoroughly, being sure it is wet all the way to the scalp. Pour 15-30 ml 1-2 tablespoons of shampoo into the palm of your hand, and then work it into the hair to form a lather. Lather the hair until all surfaces have been washed. Rinse thoroughly - if any shampoo is left in the hair, it will dry in place forming clumps of yellowish flakes.

Comb or brush your hair immediately after washing it, and again several times through the day. Longer hair needs more frequent care. Very short hair may not need combing at all. When you are finished combing or brushing, run water over the comb or brush to clean it. Over time, a comb will collect a build-up of dirt which is difficult to rinse off. When this happens, run the teeth of the comb through the bristles of the brush. Rinse both.

Do not share a comb, brush, hat, or other headgear with another person, as this can facilitate the spread of lice.

10. Describe the proper care for your hands and fingernails.

Hands should be washed frequently throughout the day, especially after using the restroom. Germs are most commonly spread by hand-contact, and washing them is an effective way to prevent their spread. Be sure to use soap on the palms, fingers, the back of the hands, and under the fingernails, and rinse well. Many people avoid handwashing because it dries their hands, but this is really an effect of improper rinsing. If you find that handwashing still dries your skin even after thorough rinsing, apply a lotion. It is even more important to wash dried, cracked skin, as the cracks offer an entry for germs into your system. Drink plenty of water to keep your skin hydrated.

Fingernails should be trimmed neatly using nail clippers. Do not chew the fingernails or tear them off. Clean beneath the nails whenever you see dirt under them.

13. List four reasons why your face is important to you, and

show how the way you exercise and sleep can improve your facial appearance.

What relationship do thoughts have to facial “print-out”? Describe proper facial care.

Importance

Reasons why your face is important: a It is the first thing that others see. b It is the first thing that you see (when you look in the mirror). c It is one of the main communicators of your emotions. d Most people define “cute” or “handsome” based on the way a person’s face appears. e People recognize you more by your face than by any other part of your body. Your face defines you.

Sleep and Exercise

Because your face is so central to who you are, you should take care to make it look its best. Lack of sleep will not only make you tired, it will make you look tired too. Regular (and sufficient) sleep will keep you from looking tired all the time. Regular exercise will do this too, because if you exercise regularly, you will not only be more fit, you will have more energy.

Facial Print-out

People can adopt a facial expression as a voluntary action. However, because expressions are closely tied to emotion, they are more often involuntary. It

can be nearly impossible to avoid expressions for certain emotions, even when it would be strongly desirable to do so; a person who is trying to avoid insult to an individual he or she finds highly unattractive might nevertheless show a brief expression of disgust before being able to resume a neutral expression. The close link between emotion and expression can also work in the other direction; it has been observed that voluntarily assuming an expression can actually cause the associated emotion.



Facial Care

The most important aspect of facial care is regular and frequent cleansing. This can be accomplished with soap and water. Begin by wetting the hands and face with water, then lather the hands with soap and apply to the face. Work the soap over the surface of the face, rubbing it gently. Then rinse thoroughly. If desired, a lotion can be applied to the face to moisturize the skin, but little proof exists that this provides any health benefits at all. However, if the use of a moisturizer builds a person’s confidence, it will do more good than harm.

12. Discuss scriptural guidelines that will help you cope with your sexuality and keep your thoughts-life clean. Discuss intelligently the “dos and don’ts” of dating.

Scriptural Guidelines

Philippians 4:8 “Finally, brothers, whatever things are true, whatever things are honorable, whatever things are just, whatever things are pure, whatever things are lovely, whatever things are of good report; if there is any virtue, and if there is any praise, think about these things”.

The longer one thinks about sinful things, the more likely that person is to engage in that activity. Philippians 4:8 recommends against impure thoughts.

Exodus 20:14 “You shall not commit adultery”.

1 Corinthians 6:9, 10 “Or don’t you know that the unrighteous will not inherit the Kingdom of God? Don’t be deceived. Neither the sexually immoral, nor idolaters, nor adulterers, nor male prostitutes, nor homosexuals, nor thieves, nor covetous, nor drunkards, nor slanderers, nor extortioners, will inherit the Kingdom of God”.

Adultery and sexual immorality are any sexual activities that take place outside the marriage.

Matthew 5:27,28 “You have heard that it was said, ‘Do not commit adultery.’ But I tell you that anyone who looks at a woman lustfully has already committed adultery with her in his heart”.

This text tells us that adultery is a sin that a person can commit in private. Do not entertain ideas of sexual immorality, even in your own private thoughts.



Dating

When inviting a person on a date, it is better to immediately reveal what you have in mind rather than asking if the person is busy. Asking if the person is busy may cause them to feel cornered. After admitting that they are not busy, they will feel trapped if they do not like the plans you are proposing.

Make sure you go to the door when you arrive. It is rude to stay in the car and honk the horn, Honking the horn will also disturb the neighbors. If invited inside to meet the parents, do so as pleasantly as you can.

Do not attempt to get your date to do anything you know violates either his/her or your own sense of morality. Pay attention to your date during your time together. It is rude to invite someone on a date and then spend most of your time together focusing on someone else (of either sex). It goes without saying that you should never flirt with someone else during the date.

When the date has concluded, escort your date back to the front door. Don’t just dump her out of the car at the curb. Make sure you return home at the appointed time. Doing otherwise will make you look bad to your date’s parents, and may get your date into trouble. This will not reflect well on you.

14. Know the rules of table etiquette which make it easier for you and those around you, such as what to do with your knife and fork after using them. Know how to be a welcome dinner guest and a joy to your hostess.

Table manners are the etiquette used when eating. This includes the appropriate use of utensils. Different cultures have different standards for table manners. Many table manners evolved out of practicality. For example, it is generally impolite to put elbows on tables since doing so creates a risk of tipping over bowls and cups. Within different families or groups, there may be less rigorous enforcement of some traditional table manners of their culture while still maintaining others. For example, some families ignore elbows on the table or mixing of foods.

Table Layout

- Bread plates are to the left of the main plate, beverage glasses are to the right.
- Salad fork, knife and soup spoon are further from the main plate than the main course knife, fork and spoon. Dessert utensils are either placed above the main plate or served with dessert.
- The sharp edge of the knife blade faces the plate.

General Behavior

- Chew with your mouth closed.
- Do not talk at an excessively loud volume.
- Refrain from coughing, sneezing or blowing nose at the table.
- Never tilt back your chair while at the table, or at any other time.
- Do not make unbecoming noises while eating.
- Do not play with food or table utensils.
- Do not single out or chastise someone who has shown poor table manners.
- Do not put your elbows on the table or slouch. It is acceptable, however, to rest forearms, up to the elbow, on the table.
- Always ask the host or hostess to be excused before leaving the table.
- Do not stare at anyone while he or she is eating.
- Never talk on your phone at the table. If urgent, ask host or hostess to be excused, and go outside. Apologize after returning.

Utensils

- Do not eat food with your fingers unless you are

eating foods customarily eaten with fingers, such as bread, French fries, chicken wings, pizza, etc. At more formal occasions, it is acceptable to eat asparagus or some romaine lettuce dishes with ones hands. However, as this is an obscure etiquette rule, in more casual settings, it is customary to use utensils.



- The fork may be used either in the American (use the fork in your left hand while cutting; switch to right hand to pick up and eat a piece) or the Continental (fork remains in the left hand) fashion – either is now acceptable.
- The fork is used to convey any solid food to the mouth.
- The knife blade should be placed on the edge of your plate when not in use. The blade should always face inward.
- When you have finished eating soup, the spoon should be placed to the side of the saucer, not left in the bowl.
- Keep your napkin on your lap. At more formal occasions all diners will wait to place their napkins on their laps until the host or hostess places his or her napkin on his or her lap.
- When eating barbecue or some other messy foods, a ‘bib’ napkin may be provided for and used by adults. Usually these foods are also eaten by hand, and wet wipes or paper napkins should be used to clean the hands.
- When using paper napkins, never ball them up or allow stains to show.
- Use your silverware from the outside moving inward toward the main plate. (Salad fork, knife and soup spoon are further from the main plate than the main course knife, fork and spoon. Dessert utensils are either placed above the main plate or served with dessert.)

Dining

- A prayer or ‘blessing’ may be customary in some families, and the guests should join in even if they are not religious or do not follow the same religion. Most prayers are made by the host before the meal is eaten. Instead or in addition, a ‘toast’ may be offered.
- Do not start eating until (a) every person is served or (b) those who have not been served request that you begin without waiting. At more formal occasions all diners will wait to begin until the hostess or host lifts a fork or spoon.
- When a dish is presented ‘family style’, the food is



- served to one's plate and then passed on to the next person. put the food on your left, take some and pass to the person next to you.
- When serving, serve from the left and pick up the dish from the right. Beverages are both served and removed from the right.
 - Eat soup noiselessly and with the side of the spoon.
 - Hot drinks should never be poured into the saucer to cool but should be sipped from the cup. Alternatively, ice may be used to cool them.
 - Seasoning ones meal prior to tasting can be considered rude and may insult the chef.

- It is acceptable in most places to not finish all of the food on your plate.
- When finished with your meal, place your knife and fork with handles at the 4 o'clock position and the tines of the fork down to signal to the server you are done.
- Except in a public restaurant, do not ask to take some of your uneaten food away from the meal after it ends, and never when attending a formal dinner.

At the end of the meal

6. List seven points showing the power of correct posture.

Check your posture and body profile. Demonstrate how to stand and sit correctly. Read Education, by Ellen G. White, page 198, paragraph 3, and note the benefits mentioned that come to you as a result of correct posture.

Good posture does the following:

1. Provides optimal balance.
2. Optimizes breathing.
3. Affects the circulation of bodily fluids.
4. Reduces back pain.
5. Protects the joints from strain.
6. Expresses confidence.
7. Is considered an integral part of physical attractiveness.
8. Improves the body's ability to carry heavy loads.
9. Protects against spinal deformity as a person ages.

Education, page 198, paragraph 3 reads as follows: "Among the first things to be aimed at should be a correct position, both in sitting and in standing. God made man upright, and He desires him to possess not only the physical but the mental and moral benefit, the grace and dignity and self-possession, the courage and self-reliance, which an erect bearing so greatly tends to promote. Let the teacher give instruction on this point by example and by precept. Show what a correct position is, and insist that it shall be maintained."

Sitting

The spine has four normal curvatures. From top to bottom they are the cervical, thoracic, lumbar, and sacral curves. The upper three of these should be aligned as shown in the image to the right when sitting. To get them into this position, do the following:

- Sit in a chair with your buttocks touching the back of the chair.
- Slouch forward (don't worry, we will correct this

immediately!)

- Straighten up and accentuate the lumbar curve arching our shoulders back. Hold this position for a few seconds.
- Release and relax, drawing your abdomen back into a comfortable position, but with your shoulders still straight and back.
- Make sure your weight is distributed evenly on both hips.
- Keep your feet flat on the floor. Your knees should be level with your hips or a bit higher. If you cannot do this and keep your feet flat on the floor, adjust your chair (if it is adjustable) or use a smaller chair.
- Do not cross your legs.



If working at a computer, your forearm should extend directly in front of you and remain horizontal. The wrists should arch downwards towards the keyboard. You may need to use a wrist support to help you with this.

Standing

When standing, the spine should follow all four curvatures as in the image above. Observe the following points:

- Hold your head up with your chin in.
- Thrust the chest forward and the tummy tucked in.
- Keep your knees straight.
- Make sure your pelvis is not tilted (neither forward nor back).
- If standing for a long period of time, rest one foot on a slightly elevated surface, such as a step. If working in the kitchen, you can open the cabinet door and rest your foot on the lower shelf.
- Do not stand in the same position for a long period of time. You should change positions every 5 to 15 minutes.



For Young Ladies

16. Demonstrate two exercises that will improve your posture.

Many different exercises might be chosen to improve different aspects of one's posture, but in light of proper posture as detailed in requirement 6, the following two exercises are chosen as especially important for young women:

1. Lying on your back

Lie on your back on the floor with your knees bent and feet flat on the floor.

- Use your abdominal and gluteal (buttock) muscles to roll your bottom a little and press your lower back against the floor.
- Maintain the pressure for 5 – 10 seconds and slowly let go.
- Repeat 10 times.

Try to do the same exercise while standing with your legs straight and against a wall.

This exercise strengthens the abdominal and gluteal muscles and helps to focus on the pelvis position in order not to exaggerate the lumbar lordosis (an inward curvature of the lumbar and cervical segments of the spine) as is often seen with young women and girls, giving them lot of problems during pregnancy with peri-partus-pelvic pain.

2. Sitting on a chair

- Lift your arms to a horizontal position
- Swing them slowly outwards and backwards as far as possible.
- Repeat 10 times.

This exercise strengthens the muscles of the back of your shoulders, stretches the muscles in the front of your chest, and thus works towards lesser thoracic kyphosis (curvature of the upper spine) and makes more room for your lungs and heart.

17. Know how to choose a hairstyle that makes you look your best.

The choice of a hairstyle is a personal one, but if the goal is to look your best, the generally accepted advice is to style it to even out the shape of your head and face. A girl with a long, narrow face should choose a hairstyle that makes her face look a little wider. A girl with a round, wide face should use her hair to "lengthen" her face by exposing more of her forehead

and adding height.

18. Tell the proper style of clothes to wear if you are tall, plump, short, or thin or have a heavy hipline or full bosom.

The most important aspect for a Christian woman to consider when choosing her clothing is modesty. Immodest clothing will make it difficult for young men to control their thoughts.

Stripes can be used to emphasize or play down height or width. Vertical stripes emphasize height while playing down width, while horizontal stripes emphasize width while playing down height. Therefore, a tall, thin girl should wear horizontal stripes, and a short, plump girl should wear vertical stripes. Tall girls may not wish to wear shoes with high heels, while shorter girls may benefit from them.

A girl with a weight problem should not wear tight clothing as that accentuates her problem. Loose-fitting clothing is always a better choice.

19. Demonstrate the correct way to put on a coat or outer wrap.

This requirement assumes that the young lady will be assisted with her coat or wrap by a young man. In this case, the young man should remove the coat from the hanger and hold the coat along the shoulder seams (he should grasp the right shoulder seam with his right hand and the left seam with his left hand so that the back of the garment is facing him).

He should then open the coat to reveal the sleeve holes and offer it to the young lady. She should not need to reach up or down to slip her arm into the sleeve of the coat. Once she has both her arms in the sleeves, the young man should release the coat or wrap and the young lady may button it herself (if she so chooses).

For Young Men

16. Tell how to have well-groomed hair and how to choose a hairstyle that makes you look your best.

Wash your hair regularly, and comb it several times between shampooing. Long hair needs to be washed more frequently (at least every other day), while short hair requires less maintenance.

The choice of a hairstyle is a personal one, but if the goal is to look your best, the generally accepted advice is to style it to even out the shape of your head. A person with a long, narrow face should choose a hairstyle that makes the face look a little wider. A person with a round, wide face should use the hair to "lengthen" the face by exposing more of the forehead and adding height.

17. List clothing rules and the proper style of clothes to wear if you are tall and thin, or short and chubby.

A tall, thin boy should wear a shirt with horizontal stripes, and a short stocky boy should wear a shirt with vertical stripes. Horizontal stripes emphasize width and play down height. Vertical stripes emphasize height and play down width.

18. Tell why Christians should practice good manners.

Demonstrate how to seat a girl or woman at a table and how to properly escort her from home to a social function.

Christians should practice good manners because they are ambassadors of Christ. Rudeness on the part of a Christian reflects poorly on all Christians. Unfortunately, many professed Christians do not practice good manners, leading many to conclude that Christianity produces rude people.

When escorting a girl or a woman, the boy should offer her the crook of his elbow. The woman may slip her arm around his, and they may walk arm-in-arm to her seat. The boy then pulls her seat out for her so that she may step in front of it. As she sits, he should push the seat forward. This can and should be practiced in a club environment, but the instructor must be vigilant that no one tries to pull the chair out from under a person who is sitting. This might seem like a funny stunt to pull, but it can cause serious injury, and it is very bad manners. Do not assume that your Pathfinders will know this ahead of time.





Giving two reasons why physical fitness is important. Explain the relationship between proper diet, exercise, and weight control.

Exercise keeps your organs functioning properly, avoiding blockages and poor circulation. A healthy diet is also important for weight control. Excessive weight causes disease.

On average, the number of calories you consume should equal the number of calories you burn. Calories enter the body through the things we eat and drink - in other words, from the diet. Calories are burned by physical activity. The more physically active you are, the more calories you will burn.

If you consume more calories than you burn, you will gain weight. If you burn more calories than you consume, you will lose weight. If your caloric intake equals your caloric expenditure, you will maintain your current weight. This applies no matter what your weight is. There is no weight beyond which a person cannot get any heavier (unless the excess weight results in death, as it often does).

Explain the benefits of fresh air and sunshine.

The majority of Americans spend 90 percent of their time indoors and according to the Environmental Protection Agency, indoor air is twice as polluted as outdoor air. By just getting outside for 15 minutes a day, you will decrease your stress level, clear your mind and have a more positive attitude.

Every system in our bodies is dependent on oxygen, and fresh air is the easiest way to get it. Also, a sensible amount of sun exposure plays a significant role in nourishing and energizing the human body.

Actual Health Benefits of fresh air and sunshine include:

- Boost the immune system
- Lower cholesterol
- Increase metabolism
- Improves blood pressure
- Improves blood sugar
- Aids in weight loss
- Better cardiovascular health
- Better liver function
- Better kidney function
- Improve digestion
- Stronger skeleton
- Reduce stress and anxiety
- Fight depression
- Releases endorphins
- Improves skin tone and texture
- Helps improve sleep

Learn Health Principles and the 8 Laws of Health

Fresh Air

Fresh air invigorates the vital organs and aids the system in ridding itself of accumulated impurities. Fresh air also brings life to the skin and has a decided influence on the mind. Fresh air contains negative ions which help to immune system fight disease. The lack of fresh air causes specific problems such as fevers, colds, and lung diseases.

“The stomach, liver, lungs and brain are suffering for want of deep, full inspirations of air which would electrify the blood and impart to it a bright, lively color, and which alone can keep it pure, and give tone and vigor to every part of the living machinery.”—Ellen G. White, Testimonies Vol. 2, pp. 67-68

In the morning, step outside and breathe deeply; then expel all the air in your lungs. Repeat this about 3 or 4 times. Have fresh air ventilating in your home day and night. Exercise in the open air will promote good circulation. Air is the free blessing of Heaven.

Sunshine

Every living thing in our world is dependent on sunlight. Without sunlight nothing would live. The following discoveries show the benefits derived from the sun: It lowers blood sugar and blood pressure; it lowers cholesterol by converting it to vitamin D; it utilizes calcium and phosphorus; it increases red blood cells; it increases white blood cells; it strengthens the immune system; it calms the nerves and increases adrenaline; it destroys germs on the skin; it reverses jaundice; it increases circulation; and it helps eliminate pesticides and other chemicals from the system.

“Pure air, good water, sunshine, the beautiful surroundings of nature...these are God’s means for restoring the sick to health.”—Ellen G. White, Testimonies, Vol. 7, p. 85

Start the day with exposing your face and body to the sun for 10 to 15 minutes. Gradually increase your time to 30 to 45 minutes daily. **DO NOT GET A SUNBURN.** The best time for sunbathing is between 9:00 and 10:00 AM and between 4:30 and 5:30 PM.

Abstemiousness

Abstemiousness means temperance. True temperance teaches us to dispense entirely with everything harmful and to use judiciously that which is healthful. Avoid anything that is harmful to your body. This includes liquor, drugs, tobacco, overeating, eating be-

tween meals, sugar-laden foods, strong condiments and spices, all caffeinated foods (chocolates and some sodas contain caffeine, as do coffee and tea), large combinations of foods, grease and fat, excess salt, and animal foods. “Indulgence in eating too frequently, and in too large quantities, overtaxes the digestive organs, and produces a feverish state of the system. The blood becomes impure, and then diseases of various kinds occur.”—Review and Herald, September 5, 1899

“Abstemiousness in diet and control of the passions, will preserve the intellect and give mental and moral vigor, enabling men to bring all their propensities under the control of the higher powers, and to discern between right and wrong, the sacred and the common.”—Ellen G. White, Testimonies, Vol. 3, p. 491

Rest

- The greatest remedy for being tired is SLEEP.
- The body requires plenty of rest to heal.
- Sleep is the greatest rejuvenator; it restores strength to muscles, nerves, and brain.
- During sleep the body repairs, reenergizes, and prepares for renewed activity.
- One hour of sleep before midnight is equal to 2 hours of sleep after midnight.
- During a day of work and activity, toxins build up in our system which cannot immediately be thrown off. These toxins produce fatigue—that well-known weariness at the end of the day. Sleep gives the body time to expel wastes and to make repairs.

“The stomach, when we lie down to rest, should have its work done, that it may enjoy rest, as well as other portions of the body. The work of digestion should not be carried on through any period of the sleeping hours.”—Ellen G. White, Healthful Living, p. 84

Rest is not synonymous with sleep. Four types of rest are:

- Physical Rest—sitting, lying down, or relaxing. Not eating late at night or before bed.
- Sensory Rest—quietness and refraining from using the eyes.
- Emotional Rest—a withdrawing from the ups and downs caused by personal interaction.
- Mental Rest—a detaching of the mind from all intellectual demands or activity.

Your Prescription: First, get the sleep your body needs, 8 hours a day and several hours before midnight. Second, do not neglect that important rest we need, such as taking morning walks, sitting in a jacuzzi or by a mountainside, looking at a forest or lake, going to the ocean, or reading the Scriptures.

Exercise

“There is no exercise that can take the place of walking, by it the circulation of the blood is greatly improved. Walking, in all cases where it is possible, is the best remedy for the diseased bodies, because in this, all of the organs of the body are brought into use.”—Ellen G. White, Testimonies, Vol. 3, p. 78

“Moderate exercise every day will impart strength to the muscles, which without exercise become flabby and enfeebled.”—Ellen G. White, Testimonies, Vol. 2, p. 533

“Exercise will aid in the work of digestion. Take a walk after a meal; but no violent exercise after a full meal.”—Ellen G. White, Testimonies, Vol. 2, p. 530

“Morning exercise, walking in the free, invigorating air of heaven, or cultivating flowers, small fruits, and vegetables, is the surest safeguard against colds, coughs, congestion of the brain, inflammation of the liver, the kidneys, and the lungs, and a hundred other diseases.”—Ellen G. White, Healthful Living, p. 176-177

Studies are finding that exercise is an important factor in the fight against cancer.

Water

The body requires water constantly. Most of this water is recycled within the body itself. However, it must have a replacement of eight glasses of water per day. Cleansing of waste material is a daily task for the body, not only from its own wastes, but from the constant bombardment of germs and viruses, and in today's society, from chemicals and drugs. If the body is not thoroughly cleansed, it is forced to break down. “Water is the best liquid possible to cleanse the tissues....

Drink some, a little time before or after a meal.”—Ellen G. White, Healthful Living, p. 226
Other benefits of water are hydrotherapy, hot and cold fomentation, enemas, etc.

Nutrition

Proper nutrition is vital to good health. Food that is devitalized cannot supply the vitamins and minerals it lacks. Therefore, it is of utmost importance that we choose wisely the food that goes on our table. Vegetables and fruits should be making the greater proportion of our meals, along with whole grains, beans, legumes, and seeds. Nuts can be included in small amounts. From our food, we will obtain all the elements essential for good health: vitamins, minerals, water, carbohydrates, protein, fats, and fiber.

Two meals a day are better than three; but if a third meal is eaten at all, it should be light, and eaten several hours before going to bed. Example: two meals—8 AM and 3 PM or three meals—6 AM, 12 PM, and 6 PM.

Trust in Divine Power

The foundation of all health is in the acceptance of the blessings which the Creator has provided for us. Foremost of these is the privilege we have of choosing our Saviour to be our Guide as well as our Great Physician. In fact, the divine purpose of our physical healing is to make us more inclined to accept the spiritual healing Christ longs to perform upon our hearts. “Prayer is the opening of the heart to God as to a friend... Prayer does not bring God down to us, but brings us up to Him.

“He [Jesus] found comfort and joy in communion with His Father. And if the Saviour of men, the Son of God, felt the need of prayer, how much more should feeble, sinful mortals feel the necessity of fervent, constant prayer.” Ibid, pp. 64, 65

Complete the Stars Honor

1. Answer the following questions

a. What is the earth's nearest celestial neighbor? What is its distance from the earth?

The Earth's nearest celestial neighbor is the Moon, which has an average distance from the Earth of about 240,000 miles (386,000 kilometers).

b. What governs the tides?

The tides are governed by the Moon, and to a lesser extent, by the Sun.

c. What causes an eclipse?

An eclipse is caused when the Sun, Earth, and Moon are in a direct line with one another. When the Earth is between the Sun and the Moon, we see a lunar eclipse, which is the Earth's shadow falling on the moon. When the Moon is between the Sun and the Earth, we see a solar eclipse, which is when the Moon's shadow falls on the Earth (blocking the Sun).

d. What is a shooting star?

A shooting star is not a star at all, but rather a meteor. A meteor is any celestial body (usually quite small) that falls to the Earth. Most burn up in the atmosphere before reaching the surface, leaving a bright, short-lived streak in the sky. It is not a comet.

2. Make a diagram showing relative positions and movements of the earth, sun, and moon. Show positions and area events for eclipses of the sun and moon.

One may demonstrate by using an orange, walnut, and marble, or similar objects, to show positions and movements of the earth, sun, and moon when there is an eclipse of the sun and when there is an eclipse of the moon.

Place the "sun" model in the center. Place the "earth" some distance from the sun, and show how it travels in a near circle around the sun. The moon travels around the earth, but it always shows the same face to the earth (it's rotation on its axis takes the same amount of time as its orbit around the earth).

4. How fast does light travel? How far does light travel in a year?

Light travels at 186,000 miles per second (not miles per hour), which is 300,000 kilometers per second. In one year, light will travel 5.88 trillion miles (9.4 quadrillion km). This distance is also called a light-year.



6. What is a constellation? Name and point out six. Name two constellations visible throughout the year.

A constellation is any one of the 88 areas into which the sky - or the celestial sphere - is divided. The term is also often used less formally to denote a group of stars visibly related to each other in a particular configuration or pattern.

Ursa Major

Ursa Major is better known as the Big Dipper. It appears in the north and is fairly easy to identify. It is illustrated in a previous requirement.

Ursa Minor

Ursa Minor is better known as the Little Dipper. Use the instructions given previously for finding Polaris, which is the end of the Little Dipper's handle. Unfortunately, the stars that make up Ursa Minor are relatively dim, making this one a bit more difficult to find.

Cassiopeia

Cassiopeia is illustrated in the next requirement and is generally visible (at some time during the night) all year round. It is on the opposite side of Polaris from the Big Dipper.

Boötes

Instructions for finding Arcturus, and thus the constellation Boötes are given in a previous requirement.

Cygnus, Altair, and Lyra

These are easily identified summer constellations. The brightest stars in each of these three make up the Summer Triangle. Once the stars are found, it is easy to find the constellations they are part of. Vega is the brightest star in the Summer Triangle, and it is a member of the constellation Lyra. Cygnus is also known





as the Northern Cross. The triangle is completed by Altair which is a member of the constellation Aquila. The Winter Circle is made up of several bright stars visible in the Northern hemisphere's winter. The eastern constellation to find in the Winter Circle is Orion. Following Orion's belt will lead to Sirius, the brightest star in the sky and a member of Canis Major (the "big dog"). Canis Minor (the "little dog") is clockwise from Sirius. Continuing clockwise, we come to Gemini, Auriga, and Taurus.

The constellations that are visible throughout the year are the ones near the celestial poles:

Northern Hemisphere:

Ursa Minor
Ursa Major
Draco
Cepheus

Southern Hemisphere:

Octans
Mensa
Hydrus
Chameleon
Volans
Pavo
Musca

8. What is the Milky Way? Observe the Milky Way in the night sky.

A large gathering of stars and bodies making up one

of many galaxies. The portion visible in the night sky of Earth is only a single dimensional or flat view of the galaxy as our solar system is part of the same galaxy we have lack for a broader perspective.

9. What is the morning star and evening star? Why does it carry both names? Observe the morning and evening star in the sky.

This is not a star at all but the Planet Venus and draws in part its modern status as the Morning Star and Evening Star from mythology. Venus never appears on the opposite horizon from the sun due to its relative location to the sun and Earth. Mercury too fits this profile but is rarely actually visible.

10. Explain zenith and nadir.

Zenith is the point in space directly overhead. If you extend a line from the zenith to the point on Earth upon which you are standing, and continue that line through the Earth and out the other side, it would point to the nadir. In other words, nadir is the direction pointing directly below a particular location. The line connecting the zenith and nadir passes through the point on Earth where you're standing and also passes through the center of the Earth and out the other side.

5. What is the difference between planets and fixed stars? Identify in the sky eight fixed stars.

The word planet means wanderer because the planets appear to wander about the sky relative to the stars. The stars do not move in relation to one another (although they all appear to move together because of the Earth's rotation on its axis).

Which eight stars you choose to teach your Pathfinders to identify will depend on the season (spring, summer, winter, or fall), although some stars are visible year-round.

Stars visible in the Northern Hemisphere

Polaris

Polaris is one of the most useful stars for a person in the Northern Hemisphere to be able to identify, as it can tell you two things: which way is north, and what is your latitude (if your latitude is 38°, Polaris will be 38° above the horizon).

Capella

Capella can be found by following the line made by the two stars in the Big Dipper's handle and extending it across the Dipper's bowl.

Arcturus

Arcturus is the brightest star in the constellation Boötes, and the third brightest star in the night sky. Arcturus can be found in the summer by following the arc made by handle of the Big Dipper (away from the dipper's bowl).

3. Make a diagram of our solar system and be able to name the planets in order from the sun.

The planets in our solar system, starting from the Sun, are Mercury, Venus, Earth, Mars, Jupiter, Saturn, Uranus, and Neptune. Pluto was also considered a planet from 1930 until 2006 when the International Astronomer's Union (IAU) was prompted by the discovery of Eris, a body larger than Pluto, to come up with a formal definition of the word "planet." For years leading up to this announcement there had been rumblings in the scientific community that classifying Pluto as a planet had been a mistake, much as the classification of Ceres, the largest asteroid had been a mistake in the 1800's. After the discovery of Ceres, more and more asteroids were discovered, and it became increas-

ingly clear that it was not a planet. The same thing began to happen in the late 1900's when astronomers began to discover several Pluto-like objects in the Kuiper belt. The debate came to a head with the discovery of Eris, which has a diameter that exceeds Pluto's by 70 miles (110 km). The IAU would have to either recognize Eris as the tenth planet or "demote" Pluto. The demotion of Pluto, though not popular with the general public, makes the most scientific sense and demonstrates that science is capable of correcting its errors.

The new definition of a planet requires that an object a) orbit a star (such as the Sun), b) not orbit another planet (such as a satellite), and c) dominate the vicinity of its orbit. Pluto did not make the cut because its orbit is dominated by Neptune, and there are many objects orbiting in its vicinity that Pluto has no effect upon.

There are a number of mnemonic phrases that are easily memorized for remembering the names of the planets, including "My Very Energetic Mother Just Served Us Noodles."



7. For the Northern Hemisphere: draw a chart of the Big Dipper, Cassiopeia, and the North Star. For the Southern Hemisphere: draw a chart of the Southern Cross, Orion and Scorpio.

Northern Hemisphere

These stars and constellations can be seen from anywhere north of the tropics in the Northern Hemisphere (they are more difficult to see in the tropics, and the North Star cannot be seen at all from the Southern Hemisphere). The North Star never appears to move at all, and it can be found due north. The Big Dipper and Cassiopeia will rotate around the North Star (also known as Polaris, since it is directly above the North Pole). When drawing the diagram, be sure to include the seven stars in the Big Dipper, the five in Cassiopeia, and the North Star. Make sure that the two stars at the end of the Big Dipper's "bowl" point to the North Star. Cassiopeia should be shaped like a somewhat flattened "W".

Southern Hemisphere

The Southern Cross, Scorpio, and Orion are not really

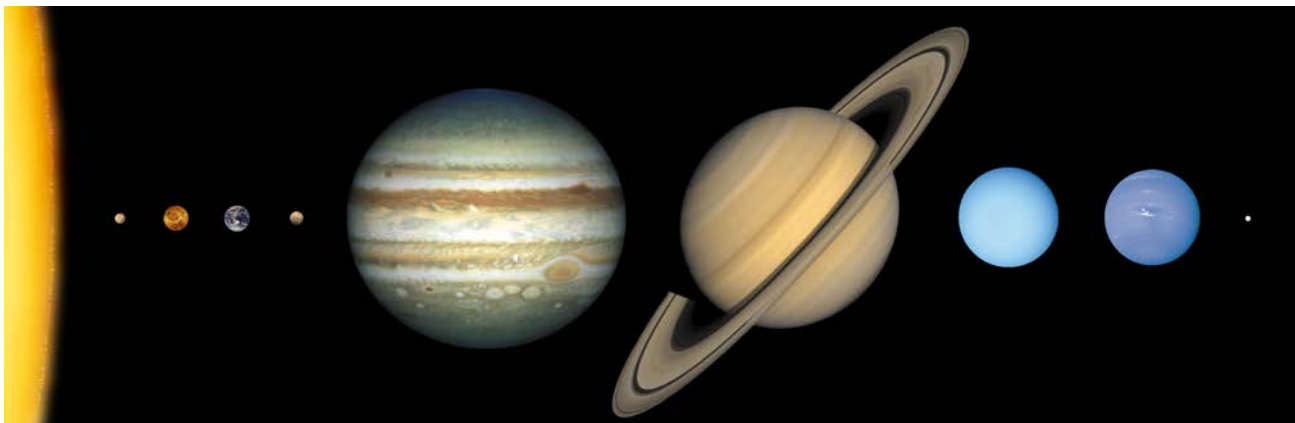
located very close to one another. It would be possible to draw them all on a single diagram, but since Orion is on the other side of the sky from the other two, you'd end up drawing an awful lot of sky. Therefore, it should be acceptable to draw these three on independent diagrams.

11. What is the aurora borealis? What causes it?

An Aurora is a beautiful natural phenomenon that of-

ten occurs in the polar regions of Earth.

The immediate causes of aurora are precipitating energetic particles. These particles are electrons and protons that are energized in the near geospace environment. This energization process draws its energy from the interaction of the Earth's magnetosphere with the solar wind.



Read Early Writings P. 41. What is the spiritual significance of Orion?



Shaking of the Powers of Heaven

December 16, 1848, the Lord gave me a view of the shaking of the powers of the heavens. I saw that when the Lord said "heaven," in giving the signs recorded by Matthew, Mark, and Luke, He meant heaven, and when He said "earth" He meant earth. The powers of heaven are the sun, moon, and stars. They rule in the heavens. The powers of earth are those that rule on the earth. The powers of heaven will be shaken at the voice of God. Then the sun, moon, and stars will be moved out of their places. They will not pass away, but be shaken by the voice of God. {EW 41.1}

Dark, heavy clouds came up and clashed against each other. The atmosphere parted and rolled back; then we could look up through the open space in Orion, whence came the voice of God. The Holy City will come down through that open space. I saw that the powers of earth are now being shaken and that events come in order. War, and rumors of war, sword, famine, and pestilence are first to shake the powers of earth, then the voice of God will shake the sun, moon, and stars, and this earth also. I saw that the shaking of the powers in Europe is not, as some teach, the shaking of the powers of heaven, but it is the shaking of the angry nations. {EW 41.2}

The above statement clearly mentions the events that would occur during Christ's second coming to this earth. The passage also mentions that God's voice would be heard through the open space in the Orion and also the "New Jerusalem" would descend from that open space. It is in agreement with the Holy Bible in Revelation 3:12 "Him that overcometh will make a pillar in the temple of my God, and he shall go no more out: and I will write upon him the name of my God, and the name of the city of my God, which is New Jerusalem, which cometh down out of heaven from my God: and I will write upon him my new name."

The same is also mentioned in the book of Revelation, chapter 21:2 & 3 "And I John saw the holy city, New Jerusalem, coming down from God out of heaven, prepared as a bride adorned for her husband. And I heard a great voice out of heaven saying, Behold, the tabernacle of God is with men, and He will dwell with them, and they shall be His people, and God Himself shall be with them, and be their God."

The passage also mentions on many things that would happen at the end of time whereby it affects nature terribly and also war between world countries with no more peace and safe place for humans.

An Open Space?

The problem our critic has is with Ellen White's "added detail" of an "open space" in the constellation Orion by which the Lord returns and the voice of God is heard. However, Ellen White doesn't seem to be the only one aware of some type of open space within Orion Nebula. NASA's power Hubble Telescope recently helped researchers discover some more information about Orion Nebula. In a video titled, "Hubble Snaps the Clearest View of the Orion Nebula" they claim to notice what they call "a ball-like cavity" within this constellation. Notice what else they say about the center of Orion Nebula:

"Packed into the center of this region are bright lights of the Trapezium stars, the four heftiest stars in the Ori-

on Nebula. Ultraviolet light unleashed by these stars is carving a cavity in the nebula and disrupting the growth of hundreds of smaller stars. The dark speck near the bottom, right of the image is a silhouette of an edge-on disk encircling a young star. Another whitish-looking disk is visible near the bottom, left, just above the two bright stars. This disk is encased in a bubble of gas and dust." (http://hubblesite.org/image/1829/news_release/2006-01)

So it shouldn't have been surprising to our critic that Ellen White mentioned an "open space" within Orion Nebula, that is, if he did the proper research.



Devotional Life Study



Develop your devotional life.
Study the Weekly Devotional Guide

Week 27
ATTITUDES

- Mark 9:33-35
- 1 Thessalonians 5:18
- Psalm 34
- Ephesians 3
- James 2

.....

.....

.....

.....

.....

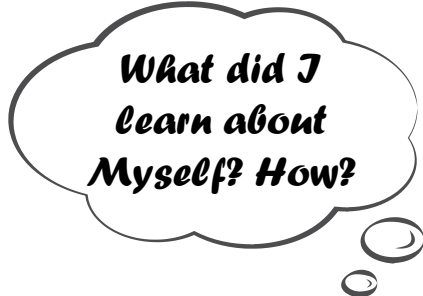
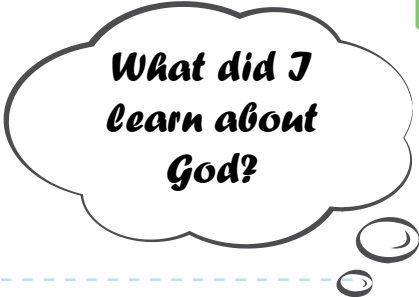
.....

.....

.....

.....

.....



.....

.....

.....

.....

.....

.....

.....

.....

.....

.....



.....

.....

.....

.....

.....

.....

.....

.....

.....

.....



Develop your devotional life.

Study the Weekly Devotional Guide

Week 28
COMMITMENT

- Isaiah 40
- Genesis 17
- Proverbs 4
- Luke 9

What did I learn about God?

What did I learn about Myself? How?

How can I apply this to my Life today?



Develop your devotional life.

Study the Weekly Devotional Guide

Week 29
GROWTH

- 1 Corinthians 6
- 1 Corinthians 13
- Psalm 53
- Psalm 90
- Ruth 1-2

What did I learn about God?

What did I learn about Myself? How?

How can I apply this to my Life today?



Develop your devotional life.
Study the Weekly Devotional Guide

Week 30
FAITH

- Jude 1
- Romans 14
- Matthew 9
- Luke 17

What did I learn about God?

What did I learn about Myself? How?

How can I apply this to my Life today?



Develop your devotional life.

Study the Weekly Devotional Guide

Week 31
PRAISE

- Psalm 108
- Psalms 27:1-4
- Psalm 56
- 1 Peter 5
- Isaiah 63

.....

.....

.....

.....

.....

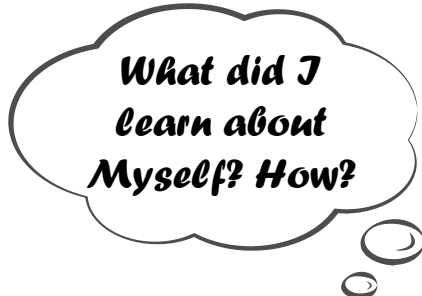
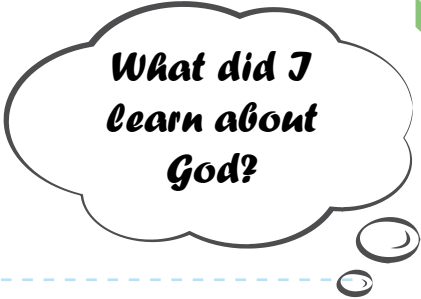
.....

.....

.....

.....

.....



.....

.....

.....

.....

.....

.....

.....

.....

.....

.....



.....

.....

.....

.....

.....

.....

.....

.....

.....

.....





Develop your devotional life.
Study the Weekly Devotional Guide

Week 32
PRAYER

- Psalms 116
- Matthew 6-7
- 1 Thessalonians 5
- Luke 18
- Psalm 20

What did I learn about God?

What did I learn about Myself? How?

How can I apply this to my Life today?





Develop your devotional life.
Study the Weekly Devotional Guide

Week 33
TRUST

- Exodus 33
- Proverbs 3:4, 5
- Psalm 62
- Isaiah 30:19-26
- Jeremiah 10
- Isaiah 38

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

What did I learn about God?

What did I learn about Myself? How?

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

How can I apply this to my Life today?

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....



Develop your devotional life.
Study the Weekly Devotional Guide

Week 34
SALVATION

- John 1
- Acts 2
- Psalm 60
- Haggai 1-2
- Romans 3

What did I learn about God?

What did I learn about Myself? How?

How can I apply this to my life today?



Develop your devotional life.
Study the Weekly Devotional Guide

Week 35
FORGIVENESS

- Isaiah 1
- Isaiah 38
- Psalm 30
- Psalm 40
- John 2

What did I learn about God?

What did I learn about Myself? How?

How can I apply this to my Life today?



Develop your devotional life.
Study the Weekly Devotional Guide

Week 36
ABUNDANT LIFE

- Romans 5
- John 15
- Luke 19:1-27
- Jeremiah 4:1-8
- Ephesians 1-2
- Ephesians 3

What did I learn about God?

What did I learn about Myself? How?

How can I apply this to my Life today?



Develop your devotional life.
Study the Weekly Devotional Guide

Week 37
DEATH

- Hebrews 9
- John 16
- Revelation 7:14-17
- Ecclesiastes 12

What did I learn about God?

What did I learn about Myself? How?

How can I apply this to my Life today?



Develop your devotional life.

Study the Weekly Devotional Guide

Week 38
BAPTISM

- Romans 6
- Matthew 3
- Matthew 28
- Luke 3
- 1 Peter 3

What did I learn about God?

What did I learn about Myself? How?

How can I apply this to my Life today?



Develop your devotional life.

Study the Weekly Devotional Guide

Week 39
SECOND COMING

- 1 Corinthians 15
- Isaiah 64
- Titus 1:13
- Isaiah 25
- James 5
- Mark 13

What did I learn about God?

What did I learn about Myself? How?

How can I apply this to my Life today?



Develop your devotional life.
Study the Weekly Devotional Guide

READ BOOK OF ACTS

-
-
-

What did I learn about God?

What did I learn about Myself? How?

How can I apply this to my Life today?





Develop your devotional life.
Study the Weekly Devotional Guide

READ BOOK OF ACTS

-
-
-

What did I learn about God?

What did I learn about Myself? How?

How can I apply this to my life today?





Develop your devotional life.
Study the Weekly Devotional Guide

READ BOOK OF ACTS

-
-
-

What did I learn about God?

What did I learn about Myself? How?

How can I apply this to my life today?





Develop your devotional life.
Study the Weekly Devotional Guide

READ BOOK OF ACTS

-
-
-

What did I learn about God?

What did I learn about Myself? How?

How can I apply this to my life today?





Develop your devotional life.
Study the Weekly Devotional Guide

READ BOOK OF ACTS

-
-
-

What did I learn about God?

What did I learn about Myself? How?

How can I apply this to my life today?





Develop your devotional life.
Study the Weekly Devotional Guide

READ BOOK OF ACTS

-
-
-

What did I learn about God?

What did I learn about Myself? How?

How can I apply this to my life today?





Develop your devotional life.
Study the Weekly Devotional Guide

READ BOOK OF ACTS

-
-
-

What did I learn about God?

What did I learn about Myself? How?

How can I apply this to my life today?





Develop your devotional life.
Study the Weekly Devotional Guide

READ BOOK OF ACTS

-
-
-

What did I learn about God?

What did I learn about Myself? How?

How can I apply this to my life today?





Develop your devotional life.
Study the Weekly Devotional Guide

READ BOOK OF ACTS

-
-
-

What did I learn about God?

What did I learn about Myself? How?

How can I apply this to my life today?





Develop your devotional life.
Study the Weekly Devotional Guide

READ BOOK OF ACTS

-
-
-

What did I learn about God?

What did I learn about Myself? How?

How can I apply this to my life today?





Develop your devotional life.
Study the Weekly Devotional Guide

READ BOOK OF ACTS

-
-
-

What did I learn about God?

What did I learn about Myself? How?

How can I apply this to my life today?





Memorize a Bible text

(not previously learned) for the following subjects:

PRAYER

- Psalms 5:3
- Psalms 51:3
- option



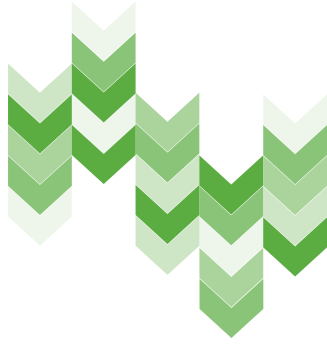


Memorize a Bible text

(not previously learned) for the following subjects:

- DOCTRINE**
- Acts 1:9-11
 - Ecclesiastes 12:13-14
 - 1 Corinthians 6:19, 20
 - option _____





Memorize a Bible text

(not previously learned) for the following subjects:

BEHAVIOR

- Colossians 3:23
- Proverbs 22:29
- Philippians 4:8
- John 3:19
- 1 Corinthians 2:14
- option _____





Memorize a Bible text

(not previously learned) for the following subjects:

SALVATION

- Matthew 16:24-27
- Luke 14:28, 33
- Proverbs 28:13
- 1 Timothy 1:15
- John 3:16-18
- option _____





Memorize a Bible text

(not previously learned) for the following subjects:

RELATIONSHIPS

- John 13:34, 35
- Proverbs 19:19
- John 15:13
- Romans 14:11
- 1 John 1:28
- option _____





Memorize a Bible text

(not previously learned) for the following subjects:

PROMISES/PRAISE

- Proverbs 3:5, 6
- Psalm 91
- 1 Corinthians 10:13
- 2 Timothy 4:7, 8
- James 4:7
- option _____





Memorize a Bible text

(not previously learned) for the following subjects:

GREAT PASSAGES

- 1 Peter 1:24, 25
- 1 Kings 18:21
- Matthew 24:37-39
- option _____









