ROLL THE DICE!

Worksheets

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Escola Eulàlia Bota

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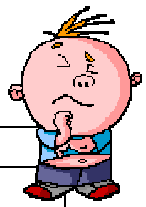
WHAT WILL HAPPEN? Think and tick. Which is the most probable answer?



	1	2	3
The sky looks like this. It's 7th August. WHAT WILL HAPPEN?	It will rain	You will get a phone call	It will snow
Today is 24th December 2011. WHAT WILL HAPPEN?	Tomorrow will be April Fools Day	You will eat lots of sweet things tomorrow	Tomorrow will be Christmas Day
We roll the die. WHAT WILL HAPPEN?	We will get an odd number (1,3,5)	We will get a ten	We will get an even number (2,4,6)
Barça has won 46 of the last 80 games with R. Madrid. R. Madrid has only won 18 of them. They are playing tomorrow. WHAT WILL HAPPEN?	Hércules will win	R. Madrid will win	Barça will win
You're playing scissors, paper, rock with a friend. WHAT WILL HAPPEN?	Your friend will win	You will win	You will tie
The traffic light is red for pedestrians. WHAT WILL HAPPEN?	The little red man will start dancing	It will show a green light	It will stay red for ever and ever
We toss a coin. WHAT WILL HAPPEN?	We will get tails	We will get head	We will get a six
It's midnight. WHAT WILL HAPPEN?	The sun will rise tomorrow morning	It will be night time for 16 more hours	You will see a shooting star
You're playing football in the playground. You're about to shoot. WHAT WILL HAPPEN?	You will score	You will miss it	You will win the set
You pick a card at random from a pack. WHAT WILL HAPPEN?	It will be black or red	It will be a heart	It will be green

WHAT WILL HAPPEN?

Look at the answers of your classmates and tick the appropriate box.

PAIR/ANSWER	1	2	3
1			
2			
3			
4			
5			
6			
7			
8			
9			
10			
11			
12			

WHAT WILL HAPPEN?

Look at the answers of your classmates and tick the appropriate box.

PAIR/ANSWER	1	2	3
1			
2			
3			
4			
5			
6			
7			
8			
9			
10			
11			
12			

OUR HYPOTHESIS

Think carefully before answering:

We will roll 100 dice. How many even numbers will we get?

Our hypothesis is that if we roll 100 dice, we will get……. even numbers.

Why?

Because……

OUR HYPOTHESIS

Think carefully before answering:

We will roll 100 dice. How many even numbers will we get?

Our hypothesis is that if we roll 100 dice, we will get……. even numbers.

Why?

Because……

OUR HYPOTHESIS

Think carefully before answering:

We will roll 100 dice. How many even numbers will we get?

Our hypothesis is that if we roll 100 dice, we will get……. even numbers.

Why?

Because……

GROUP:

YOUR HYPOTHESES – PICKING A CARD

1. Think before you start the experiment. Organise yourselves.
2. You need to repeat the experiment 10, 20 and 100 times. How will you do it?
3. How will you organise data? Will you need anything special? Ask the teacher if you need some help.

Example: Our hypothesis is that if we choose a card 10 times from a playing pack, we will get 5 hearts (remember there are 12 hearts, 12 diamonds, 12 spades and 12 clubs).
What's your hypothesis? Why?

What's the result from the real experiment?

Example: Our hypothesis is that if we choose a card 20 times from a playing pack, we will get 6 hearts.
What's your hypothesis? Why?

What's the result from the real experiment?

Example: Our hypothesis is that if we choose a card 100 times from a playing pack, we will get 20 hearts. What's your hypothesis? Why?

What's the result from the real experiment?

YOUR CONCLUSIONS

GROUP:

YOUR HYPOTHESES – PICKING A BALL

1. Think before you start the experiment. Organise yourselves.
2. You need to repeat the experiment 10, 20 and 100 times. How will you do it?
3. How will you organise data? Will you need anything special? Ask the teacher if you need some help.

Example: Our hypothesis is that if we pick a ball from a bag with 1 yellow ball, 1 blue, 1 red and 1 green 10 times, we will get 3 red balls.
What's your hypothesis? Why?

What's the result from the real experiment?

Example: Our hypothesis is that if we pick a ball from a bag with 1 yellow ball, 1 blue, 1 red and 1 green 20 times, we will get 8 red balls.
What's your hypothesis? Why?

What's the result from the real experiment?

Example: Our hypothesis is that if we pick a ball from a bag with 1 yellow ball, 1 blue, 1 red and 1 green 100 times, we will get 30 red balls. What's your hypothesis? Why?

What's the result from the real experiment?

YOUR CONCLUSIONS

GROUP:

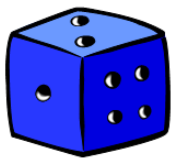
YOUR HYPOTHESES – ROLLING DICE

1. Think before you start the experiment. Organise yourselves.
2. You need to repeat the experiment 10, 20 and 100 times. How will you do it?
3. How will you organise data? Will you need anything special? Ask the teacher if you need some help.

Example: Our hypothesis is that if we roll a die 10 times, we will get 2 fives.
What's your hypothesis? Why?

What's the result from the real experiment?

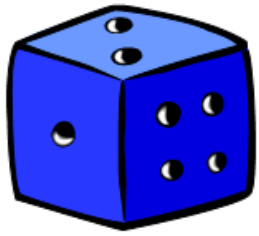
Example: Our hypothesis is that if we roll a die 20 times, we will get 5 fives.
What's your hypothesis? Why?



What's the result from the real experiment?

Example: Our hypothesis is that if we roll a die 100 times, we will get 73 fives.
What's your hypothesis? Why?

What's the result from the real experiment?



YOUR CONCLUSIONS

GROUP:

YOUR HYPOTHESES – SPINNING A SPINNER

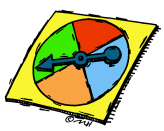
1. Think before you start the experiment. Organise yourselves.
2. You need to repeat the experiment 10, 20 and 100 times. How will you do it?
3. How will you organise data? Will you need anything special? Ask the teacher if you need some help.

Example: Our hypothesis is that if we spin a spinner with blue, green and red 10 times, we will get 3 blues.
What's your hypothesis? Why?

What's the result from the real experiment?

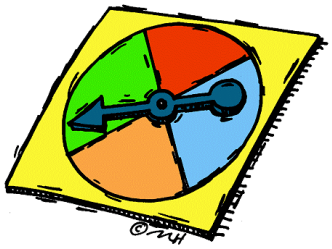
Example: Our hypothesis is that if we spin a spinner with blue, green and red 20 times, we will get 11 blues.
What's your hypothesis? Why?

What's the result from the real experiment?



Example: Our hypothesis is that if we spin a spinner with blue, green and red 100 times, we will get 30 blues.
What's your hypothesis? Why?

What's the result from the real experiment?



YOUR CONCLUSIONS

GROUP:

YOUR HYPOTHESES – TOSSING A COIN

1. Think before you start the experiment. Organise yourselves.
2. You need to repeat the experiment 10, 20 and 100 times. How will you do it?
3. How will you organise data? Will you need anything special? Ask the teacher if you need some help.

Example: Our hypothesis is that if we toss a coin 10 times, we will get 6 heads.
What's your hypothesis? Why?

What's the result from the real experiment?

Example: Our hypothesis is that if we toss a coin 20 times, we will get 14 heads.
What's your hypothesis? Why?

What's the result from the real experiment?

Example: Our hypothesis is that if we toss a coin 100 times, we will get 63 heads.
What's your hypothesis? Why?

What's the result from the real experiment?

YOUR CONCLUSIONS

1

ANSWER THIS QUESTION:
IS THE EVENT POSSIBLE?

NO

STOP: DON'T CONTINUE. THE **PROBABILITY** OF THE EVENT IS **O**

YES

GO TO NUMBER 2 TO CALCULATE THE PROBABILITY OF THE EVENT

2

COUNT THE NUMBER OF POSSIBLE OUTCOMES.
EXAMPLE:
POSSIBLE OUTCOMES WHEN ROLLING A DIE: **6** (1,2,3,4,5,6)

POSSIBLE OUTCOMES WHEN TOSSING A COIN: **2** (heads, tails)

3

3. *COUNT THE NUMBERS OF WAYS THE EVENT CAN HAPPEN (FAVOURABLE OUTCOMES)*
EXAMPLE:
GETTING A 1 WHEN YOU ROLL A DIE. HOW MANY WAYS?

EXAMPLE:
GETTING A HEAD WHEN YOU TOSS A COIN. HOW MANY WAYS? JUST **1**

4

THE PROBABILITY OF THE EVENT IS:
The number of ways the event can happen **divided** by the number of possible outcomes.
Use a fraction:

$$P(\text{event}) = \frac{\textbf{number of ways the event can happen (favourable outcomes)}}{\textbf{number of possible outcomes}}$$

numerator

denominator

5

EXAMPLE:
P(**GETTING A 1 WHEN YOU ROLL A DIE**)= $\frac{\text{Number of ways a 1 can happen}}{\text{Number of possible outcomes}} = \frac{\mathbf{1}}{\mathbf{6}}$

ANSWER THIS QUESTION:
IS THE EVENT POSSIBLE?

NO

STOP: DON'T CONTINUE. THE **PROBABILITY** OF THE EVENT IS ....

YES

GO TO …….. TO CALCULATE THE PROBABILITY OF THE EVENT

COUNT THE NUMBER OF POSSIBLE OUTCOMES.
EXAMPLE:
POSSIBLE OUTCOMES WHEN ROLLING A DIE: .....

POSSIBLE OUTCOMES WHEN TOSSING A COIN: .....

COUNT THE NUMBERS OF WAYS THE …… CAN HAPPEN(favourable outcomes)
EXAMPLE:
GETTING A 1 WHEN YOU ROLL A DIE. HOW MANY WAYS? JUST **1**

EXAMPLE:
GETTING A HEAD WHEN YOU TOSS A COIN. HOW MANY WAYS? JUST **1**

THE PROBABILITY OF THE EVENT IS:
The number of ways the event can happen **divided** by the number of possible outcomes.
Use a fraction::

$$P(\text{event}) = \frac{\textbf{number of ways the event can happen (favourable outcomes)}}{\textbf{number of possible outcomes}}$$

numerator

denominator

EXAMPLE:
P(**GETTING A 1 WHEN YOU ROLL A DIE**)= $\frac{\text{Number of ways a 1 can happen}}{\text{Number of possible outcomes}} = \frac{\text{.....}}{\text{.....}}$

ANSWER THIS QUESTION:
IS THE EVENT .....?

NO

STOP: DON'T CONTINUE. THE **PROBABILITY** OF THE EVENT IS **O**

YES

GO TO NUMBER 2 TO CALCULATE THE PROBABILITY OF THE EVENT

COUNT THE NUMBER OF POSSIBLE .....
EXAMPLE:
POSSIBLE ..... WHEN ROLLING A DIE: **6** (1,2,3,4,5,6)

POSSIBLE ..... WHEN TOSSING A COIN: **2** (heads, tails)

COUNT THE NUMBERS OF ..... THE EVENT CAN HAPPEN (favourable outcomes)
EXAMPLE:
GETTING A 1 WHEN YOU ROLL A DIE. HOW MANY WAYS? JUST **1**

EXAMPLE:
GETTING A HEAD WHEN YOU TOSS A COIN. HOW MANY WAYS? JUST **1**

THE PROBABILITY OF THE EVENT IS:
The number of ways the event can happen **divided** by the number of possible outcomes.
Use a fraction:

$$P(\text{event}) = \frac{\text{number of ways the event can happen (favourable outcomes)}}{\text{.....}}$$

numerator

denominator

EXAMPLE:
$P(\textbf{GETTING A 1 WHEN YOU ROLL A DIE}) = \frac{\text{.....}}{\text{Number of possible outcomes}} = \frac{\textbf{1}}{\textbf{6}}$

COUNT THE NUMBERS OF WAYS THE EVENT CAN HAPPEN (favourable outcomes)
EXAMPLE:
GETTING A 1 WHEN YOU ROLL A DIE. HOW MANY WAYS? ……..

EXAMPLE:
GETTING A HEAD WHEN YOU TOSS A COIN. HOW MANY WAYS? …….

THE PROBABILITY OF THE EVENT IS:
The number of ways the event can happen **divided** by the number of possible outcomes.
Use a fraction:

$$P(\text{event}) = \frac{\text{.....}}{\text{.....}}$$

numerator

number of possible outcomes — denominator

ANSWER THIS QUESTION:
IS THE EVENT POSSIBLE?

.....	.....
STOP: DON'T CONTINUE. THE **PROBABILITY** OF THE EVENT IS **O**	GO TO NUMBER 2 TO CALCULATE THE PROBABILITY OF THE EVENT

EXAMPLE:
P(**GETTING A 1 WHEN YOU ROLL A DIE**)= $\frac{\text{Number of ways a 1 can happen}}{\text{.....}} = \frac{\mathbf{1}}{\mathbf{6}}$

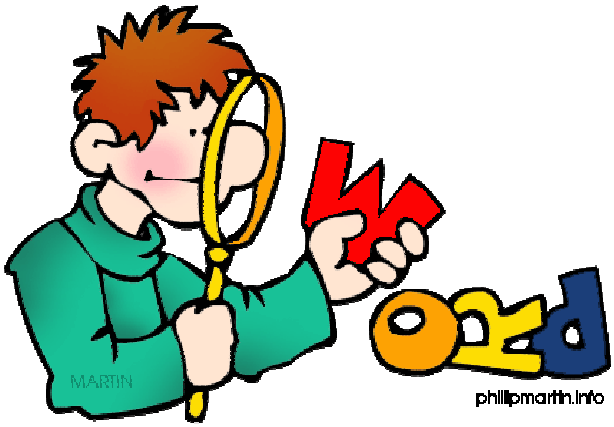
COUNT THE NUMBER OF ..... OUTCOMES.
EXAMPLE:
..... OUTCOMES WHEN ROLLING A DIE:**6** (1,2,3,4,5,6)

.....OUTCOMES WHEN TOSSING A COIN:**2** (heads, tails)

PROBABILITY PRACTICE: DICE

LIST OF WORDS YOU MAY USE

- OUTCOMES
- WAYS
- SIX
- TWO
- EVENT
- ONE
- ONE
- 1
- 6
- 0
- NUMBER 2
- YES
- NO
- DIVIDED
- FRACTION
- 7
- 5
- POSSIBLE
- NUMBER OF POSSIBLE OUTCOMES
- NUMBER OF WAYS THE EVENT CAN HAPPEN (FAVOURABLE OUTCOMES)



NAME: .....

EXAMPLE

P(A) = number of favourable outcomes/number of possible outcomes

Probability of getting a 5 when rolling a die
p (5) = 1 favourable outcome/ 6 possible outcomes = 1/6

CALCULATE THE FOLLOWING PROBABILITIES:

1. Probability of getting a 1

2. Probability of getting a 4

3. Probability of getting a 3 or a 5

4. Probability of getting an odd number

5. Probability of not getting a 6

6. Probability of getting a number from 1 to 6

7. Probability of getting a multiple of 2

8. Probability of getting a prime number

NAME: .....

EXAMPLE

P(A) = number of favourable outcomes/number of possible outcomes

PROBABILITY PRACTICE: CARDS Probability of getting a red card when picking a card

p (red) = 24 favourable outcome/ 48 possible outcomes = 24/48=1/2

CALCULATE THE FOLLOWING PROBABILITIES:

1. Probability of getting a black card

2. Probability of getting a diamond

3. Probability of getting a red or a black card

4. Probability of getting a 9

5. Probability of getting heads

6. Probability of getting a 2 or a 3

7. Probability of getting spades, diamonds or hearts

8. Probability of getting a prime number

NAME: .....

EXAMPLE

P(A) = number of favourable outcomes/number of possible outcomes

PROBABILITY PRACTICE: COINS AND SPINNERS

Probability of getting heads
P(head) = 1 favourable outcome /2 possible outcomes=1/2
Probability of getting blue
P(blue)= 2 favourable outcomes/8 possible outcomes=2/8=1/4

CALCULATE THE FOLLOWING PROBABILITIES:

1. Probability of getting tails

2. Probability of getting tails or heads

3. Probability of getting a 4 (with a coin)

4. Probability of getting yellow

5. Probability of getting red or green

6. Probability of not getting green

7. Probability of getting heads (with a spinner)

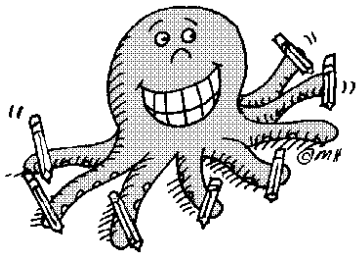
8. Probability of getting red, blue, yellow or green

SOME PROBABILITY PRACTISE

GROUP: .....

EXAMPLE

Probability of getting a 5 when rolling a die



p (5) = 1 favourable outcome/ 6 possible outcomes

CALCULATE THE FOLLOWING PROBABILITIES:

PROBABILITY WITH DICE

Probability of getting a 1

Probability of getting an odd number

Probability of not getting a 6

PROBABILITY WITH COINS

Probability of getting tails

Probability of getting a three

Probability of getting heads or tails

PROBABILITY WITH COLOUR SPINNERS

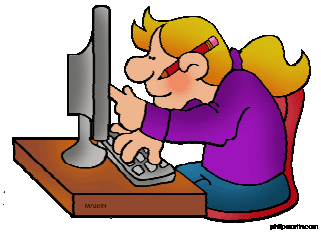
Probability of getting green

Probability of getting red or blue

Probability of getting tails

WORK WITH ICT:

FOLLOW THE INSTRUCTIONS AND ANSWER THE QUESTIONS



1. SAVE THIS FILE WITH THE OPTION SAVE AS (DESA COM) AS IN THE EXAMPLE IN YOUR CLASS FOLDER:

ANDREW-MARIA-PROB.doc

2. READ THE QUESTIONS. YOU WILL FIND INFORMATION TO ANSWER THEM IN THE TEXTS. REMEMBER TO SAVE THE DOCUMENT FREQUENTLY.
   a. Write a definition of probability.

   b. In which ways can probability be expressed?
      i.

      ii.

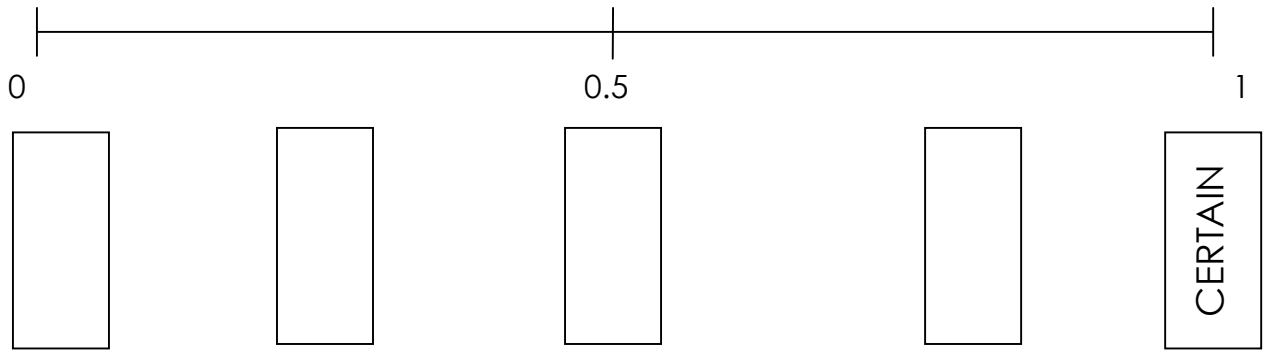
      iii.

   c. Something with low probability is to happen.
   d. Something with high probability is to happen.
   e. Show ½ as decimals and percentages:

   f. Show ¾ as decimals and percentages:

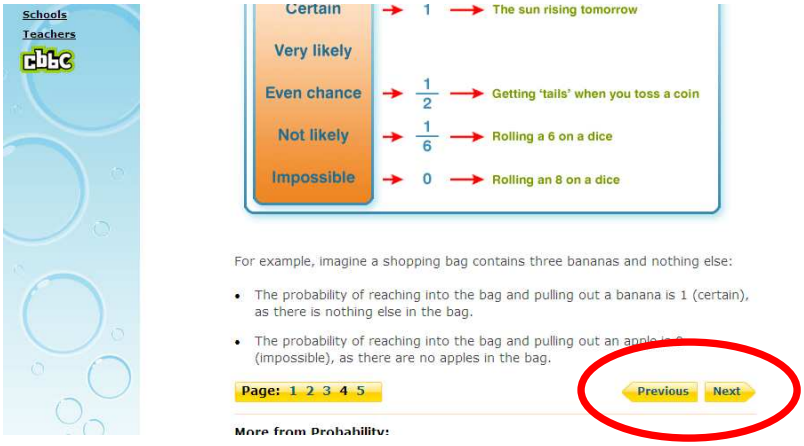
   g. Show ¼ as decimals and percentages:

   h. Write the missing words:

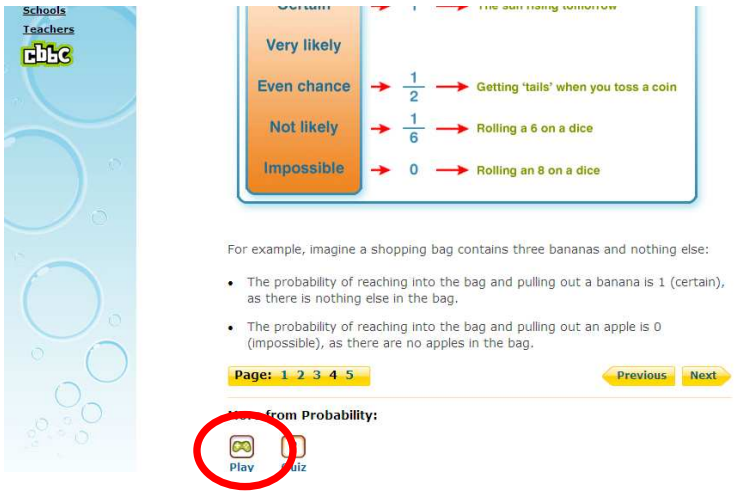


3. READ THE TEXTS AT
http://www.bbc.co.uk/schools/ks2bitesize/maths/data/probability/read1.shtml

4. READ PAGES 1, 2, 3 AND 4. (USE THE BUTTONS PREVIOUS/NEXT TO SCROLL DOWN THE PAGES: THEY ARE AT THE BOTTOM RIGHT OF THE PAGE)



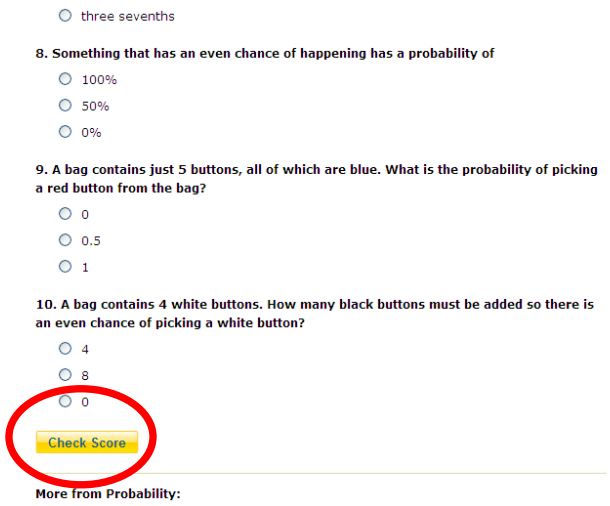
5. CLICK ON **PLAY** AT THE BOTTOM LEFT OF THE PAGE AND PLAY THE GAME (10 TIMES):



6. GO TO
http://www.bbc.co.uk/schools/ks3bitesize/maths/handling_data/probability/revise2.shtml

AND CLICK ON START TO PLAY THE GAME

7. GO TO http://www.bbc.co.uk/apps/ifl/schools/ks2bitesize/maths/quizengine?quiz=probability&templateStyle=maths AND ANSWER THE QUESTIONS IN THE QUIZ. WHEN YOU FINISH, CLICK ON **CHECK SCORE** , AT THE BOTTOM LEFT OF THE PAGE AND PRINT THE PAGE.


three sevenths

8. Something that has an even chance of happening has a probability of

100%
50%
0%

9. A bag contains just 5 buttons, all of which are blue. What is the probability of picking a red button from the bag?

0
0.5
1

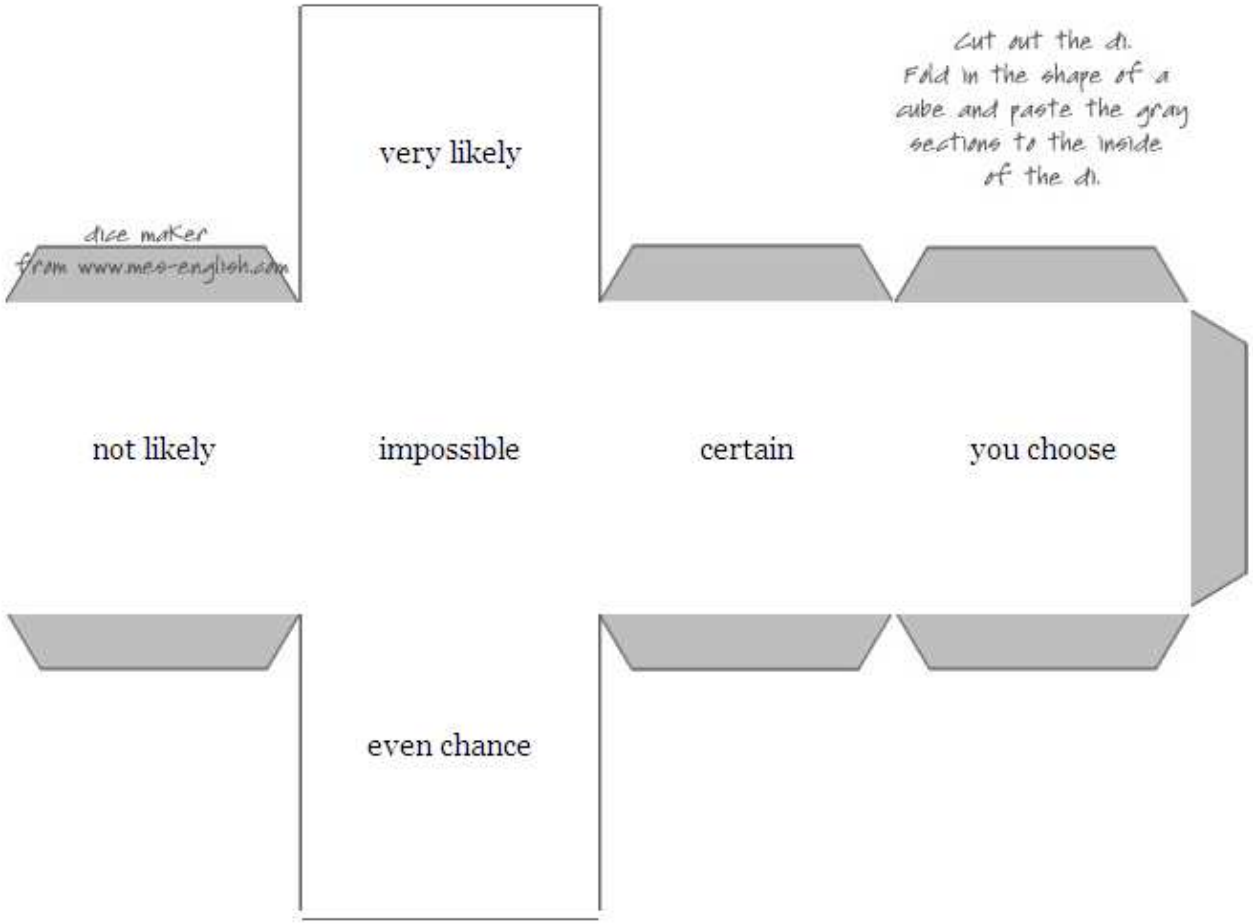
10. A bag contains 4 white buttons. How many black buttons must be added so there is an even chance of picking a white button?

4
8
0

Check Score

More from Probability:

8. MAKE SURE YOU HAVE SAVED YOUR DOCUMENT.
9. IF YOU FINISH EARLIER THAN YOUR CLASSMATES, YOU CAN WATCH: http://www.bbc.co.uk/schools/ks3bitesize/maths/handling_data/probability/activity.shtml


Cut out the di.
Fold in the shape of a cube and paste the gray sections to the inside of the di.
dice maker
from www.mes-english.com
very likely
not likely
impossible
certain
you choose
even chance

IMPOSSIBLE EVENT

IMPOSSIBLE EVENT

IMPOSSIBLE EVENT

IMPOSSIBLE EVENT

IMPOSSIBLE EVENT

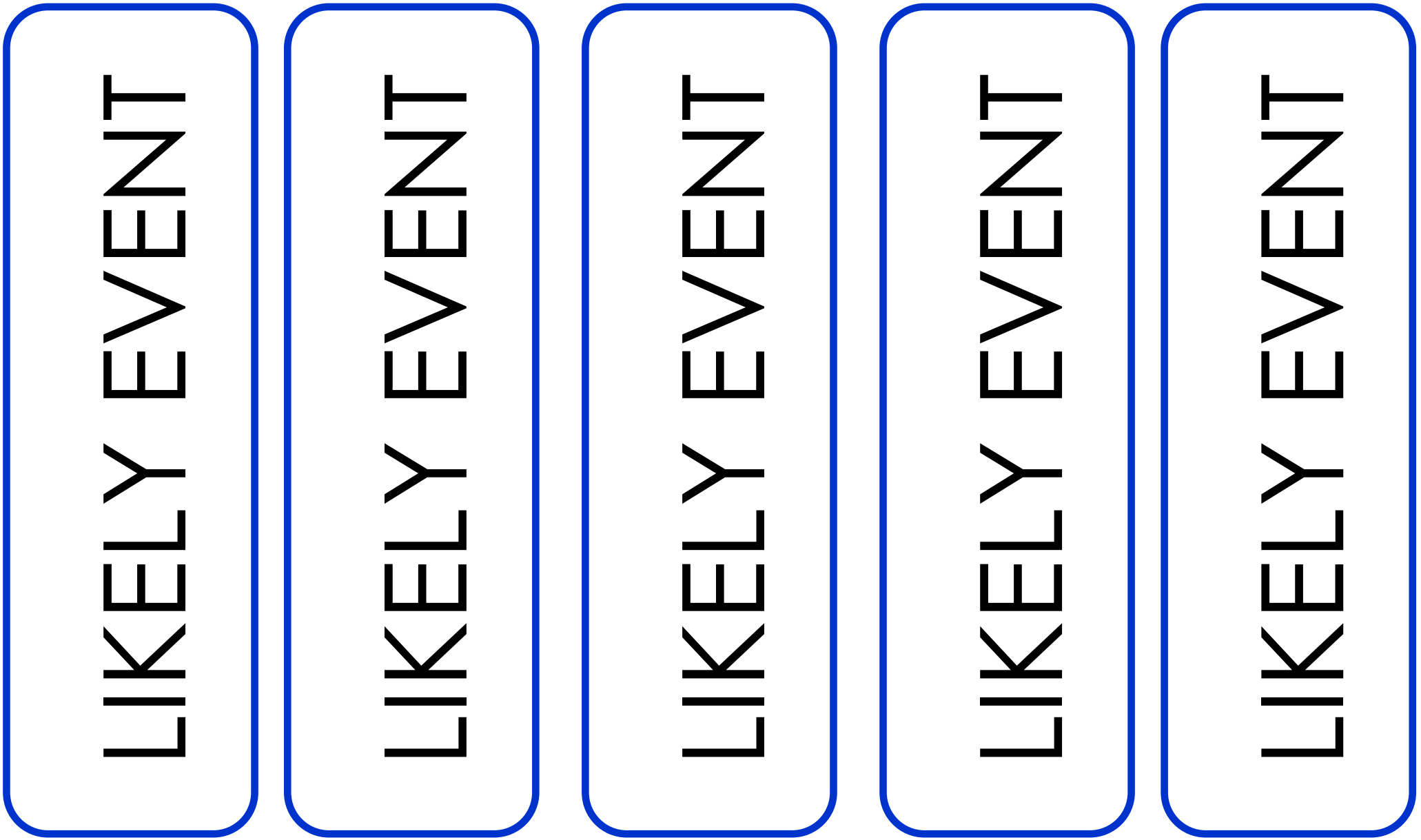
EVEN CHANCE

EVEN CHANCE

EVEN CHANCE

EVEN CHANCE

EVEN CHANCE


LIKELY EVENT
LIKELY EVENT
LIKELY EVENT
LIKELY EVENT
LIKELY EVENT

UNLIKELY EVENT

UNLIKELY EVENT

UNLIKELY EVENT

UNLIKELY EVENT

UNLIKELY EVENT

CERTAIN EVENT

CERTAIN EVENT

CERTAIN EVENT

CERTAIN EVENT

CERTAIN EVENT

certain event

P(A)=1=100%

not likely/unlikely

0<P(A)<0.5

impossible event

P(A)=0=0%

even chance

P(A)=1/2=0.5=50%

likely/very likely

$0.5<P(A)<1$

BOARD 1- ADDITION

LANE	1	2	3	4	5	6	7	8	9	FINISH LINE
1										
2										
3										
4										
5										
6										
7										
8										
9										
10										
11										
12										

From 2 to12 players. Each player chooses one lane and their counters stand on the start (if two pupils want the same number, the younger one chooses). Two dice are rolled and the numbers obtained are added (+). The counter standing on the lane with the number obtained moves one square forward. The winner is the player who gets to the finish line first.

BOARD 2-SUBTRACTION

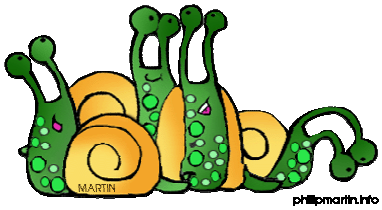
LANE	1	2	3	4	5	6	7	8	9	FINISH LINE
0										
1										
2										
3										
4										
5										
6										

From 2 to7 players. Each player chooses one lane and their counters stand on the start (if two pupils want the same number, the younger one chooses). Two dice are rolled and the numbers obtained are subtracted (-). The counter standing on the lane with the number obtained moves one square forward. The winner is the player who gets to the finish line first.

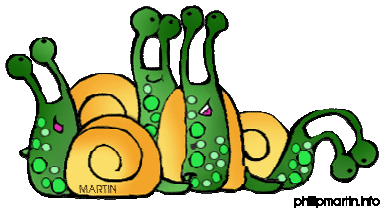
A SNAIL RACE: USEFUL LANGUAGE

Here you have some useful sentences to talk about the Snail Race:

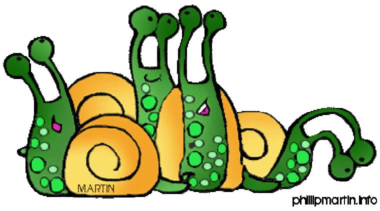
I chose lane number ..... because:
It has got a high probability
Its probability is high
It's very likely
I like it
It's a very nice number
It's my lucky number



Some questions after playing...
Which number was the winner?
Why?
Which number was the slowest?
Why?
Was there an always loser lane?
Why?
Was there an impossible lane?
Why?
Which were the best numbers?
Why?



My piece of advice. From to
You should choose number ......because:
It has got a high probability
Its probability is high
It's very likely
It was the winner
It's a very nice number
It's my lucky number



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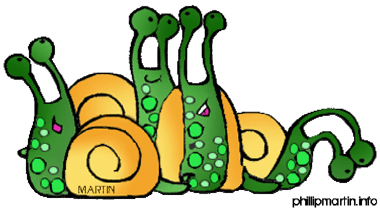

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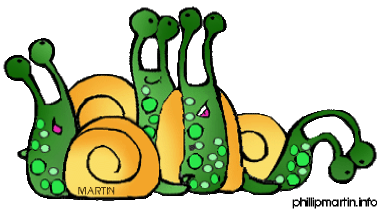
Its probability is high
It's very likely
It was the winner
It's a very nice number
It's my lucky number



A SNAIL RACE

PAIR: ……

BOARD 1:

FACTS FILE

P1: My choice was ……

The winning number was ……..

I chose the number because ……

……

……

My piece of advice was:

"You should choose number …….. because ……

……

……."

P2: My choice was …… I followed the piece of advise YES NO

The winning number was ……

BOARD 2:

P2: My choice was ……

The winning number was ……..

I chose the number because ……..

……

……

My piece of advice was:

"You should choose number …….. because ……

……

……."

P1: My choice was …… I followed the piece of advice YES NO

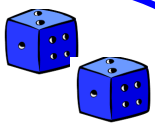
The winning number was ……

CONCLUSIONS: ……..

……

……

2 DICE DATA



Remember the Snail Race. 

Add the numbers from die 1 and die 2. Colour the squares with the same numbers in the same colours (for example: all ones blue, all twos green…)

BOARD 1

DIE 1							
6							
5							
4							
3							
2							
1							
+	1	2	3	4	5	6	**DIE 2**

Now, do the same, but subtract instead of adding.

BOARD 2

DIE 1							
6							
5							
4							
3							
2							
1							
-	1	2	3	4	5	6	**DIE 2**

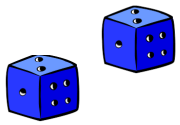
Can you see something special? Compare the two grids and answer the questions:

1. Which is the most repeated number from Board 1(+)? ……

Calculate its probability.

2. And from Board 2 (-)? ……

Calculate its probability.



3. Which is the least repeated number from Board 1(+)?……..

Calculate its probability.

4. And from Board 2 (-)?

Calculate its probability.

5. Find two numbers with the same probability in Board 1.

……

Find two numbers with the same probability in Board 2.

……

6. Find an impossible event in Board 1 which is possible in Board 2:

Getting a …….is an impossible event in Board 1.

7. Find an impossible event in Board 2 which is possible in Board 1:

Getting a …….is an impossible event in Board 2.

8. Find a sure event in Board 1.

……

9. Find a sure event in Board 2.

……

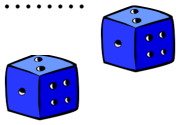
GROUP 1

Is number 2 a good bet in Board 1? ..... Why? .....

.....

.....

.....



And in Board 2? ..... Why? .....

.....

.....

.....

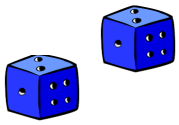
GROUP 2

Is number 1 a good bet in Board 1? ..... Why? .....

.....

.....

.....



And in Board 2? ..... Why? .....

.....

.....

.....

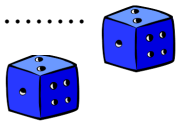
GROUP 3

Is number 0 a good bet in Board 1? ..... Why? .....

.....

.....

.....



And in Board 2? ..... Why? .....

.....

.....

.....

If a group of students finish earlier than the rest, they may be asked to solve this enigma:

THE TWO FRIENDS

Two friends are playing dice: they use 3 dice and the winner combination is 4, 2,1. Allan says: "Wow, that's a very difficult combination, less probable than getting two 6 when you roll two dice". But Peter doesn't agree with him.
Who's right? Why?

THE TWO KINGS

"Once upon a time there were two kings, one from Norway and the other from Sweden. They both wanted to rule in a border city, so they decided to play dice to decide who would have the city.
The Swedish king took two loaded dice* from his bag. He rolled the first and got a 6. He threw the second and got a six.
The Norwegian king suspected he was cheating and instead of using his own dice, he took the Swedish king's dice: he rolled a die and got a 6. Then, with enormous strength, threw the other die against a rock. The die broke into two halves. He won the city. Do you know why?"

*a loaded dice is used to cheat: you always get the same number when you roll it (its probability is 1). In this case, the dice are loaded to always show a 6). Getting a 6 is a sure event.

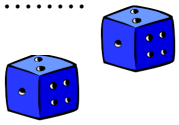
GROUP 4

Is number 7a good bet in Board 1? ..... Why? .....

.....

.....

.....



And in Board 2? ..... Why? .....

.....

.....

.....

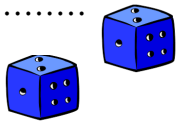
GROUP 5

Is number 5 a good bet in Board 1? ..... Why? .....

.....

.....

.....



And in Board 2? ..... Why? .....

.....

.....

.....

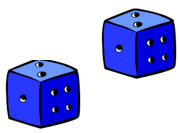
Some useful language to talk about the dice

Number 3 is not a very good bet in Board 1 because its probability is just 2/36 (1/18). In Board 2 is quite a good bet, because its probability is 6/36 (1/6).

Number 7 is an excellent bet in Board 1, but it's impossible in Board 2.

When talking about bets, you can say:

VERY BAD/BAD/NOT A VERY GOOD/GOOD/VERY GOOD/EXCELLENT



These are things that bring you good luck in the UK

It's lucky to meet a **black cat**.

It's lucky to **touch wood**. We touch or knock on wood, to make something come true.

It's lucky to find a **clover plant with four leaves**.

White heather, a very common plant in the UK. It brings good luck.

A **horseshoe** over the door brings good luck. But the horseshoe needs to be the right way up. A horseshoe upside down brings you bad luck.

On the first day of the month it is lucky to say **"White rabbits, white rabbits, white rabbits"** before your first word of the day.

It's lucky to catch falling leaves in Autumn.
Every leaf is a lucky month next year.

It's lucky to cut your **hair** when the moon is growing.

Putting money in the pocket of new clothes brings good luck.

These are things that bring you bad luck in the UK

It's unlucky to walk underneath a **ladder**.

Breaking a mirror brings you seven years of bad luck.

http://recursostic.educacion.es/bancoimagenes/web

It's unlucky to **see one magpie**, but it's lucky to see two.

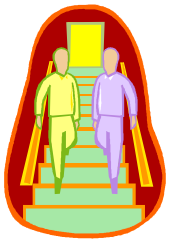
It's unlucky to **spill salt**. If you do, you must throw it over your shoulder to get good luck.

It's unlucky to **open an umbrella in doors**.

The **number thirteen** is unlucky. Friday the thirteenth is a very unlucky day.

Putting **new shoes on the table** is unlucky.

It's unlucky to **pass someone on the stairs**.



READ THE INFORMATION FROM THE TEXT. COMPARE WITH SUPERSTITIONS IN CATALONIA OR OTHER COUNTRIES YOU KNOW. DISCUSS WITH YOUR GROUP AND FILL IN THE GRID.

SUPERSTITION Good luck	**UK**	**CATALONIA**	**OTHER COUNTRY (which one?)**	**DO YOU BELIEVE IT?**

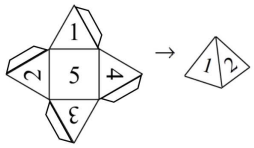
READ THE INFORMATION FROM THE TEXT. COMPARE WITH SUPERSTITIONS IN CATALONIA OR OTHER COUNTRIES YOU KNOW. DISCUSS WITH YOUR GROUP AND FILL IN THE GRID.

SUPERSTITION Bad luck	**UK**	**CATALONIA**	**OTHER COUNTRY (which one?)**	**DO YOU BELIEVE IT?**

Cut out the shape	Before rolling the die, what's the probability of getting a 3?
Fold along the lines	Before rolling the die, what's the probability of getting a 4?
Glue the flaps	Before rolling the die, what's the probability of getting a 5?
Stick the figure together	Before rolling the die, are all numbers in the die equally probable? Why?
What shape is it?	After rolling the die, are all numbers in the die equally probable? Why?

Throw the die 50 times	When you have ordered all these sentences, stand up and wait
Before rolling the die, what's the probability of getting a 1?	Fill in the grid
Before rolling the die, what's the probability of getting a 2?	Compare the results with your hypotheses

INSTRUCTIONS TO BUILD A SPECIAL DIE AND PLAY WITH IT



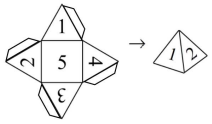
1. Cut out the shape
2. Fold along the lines
3. Glue the flaps
4. Stick the figure together
5. What shape is it?
6. Before rolling the die, what's the probability of getting a 1?
7. Before rolling the die, what's the probability of getting a 2?
8. Before rolling the die, what's the probability of getting a 3?
9. Before rolling the die, what's the probability of getting a 4?
10. Before rolling the die, what's the probability of getting a 5?
11. Before rolling the die, are all numbers in the die equally probable? Why?
12. Throw the die 50 times
13. After rolling the die, are all numbers in the die equally probable? Why?
14. When you have ordered all these sentences, stand up and wait
15. Fill in the grid
16. Compare the results with your hypotheses
17. Write a conclusion

A SPECIAL DIE

1. Now that you know how to build the die, do it.
2. When it's built, look at the die and make hypotheses before rolling it:
   a. What's the probability of getting a 1?

   b. What's the probability of getting a 2?

   c. What's the probability of getting a 3?



   d. What's the probability of getting a 4?

   e. What's the probability of getting a 5?

3. Are all numbers in the die equally probable? Why?

4. Throw the die 50 times
5. Fill in the grid

	1	2	3	4	5
How many times do we get a...?					

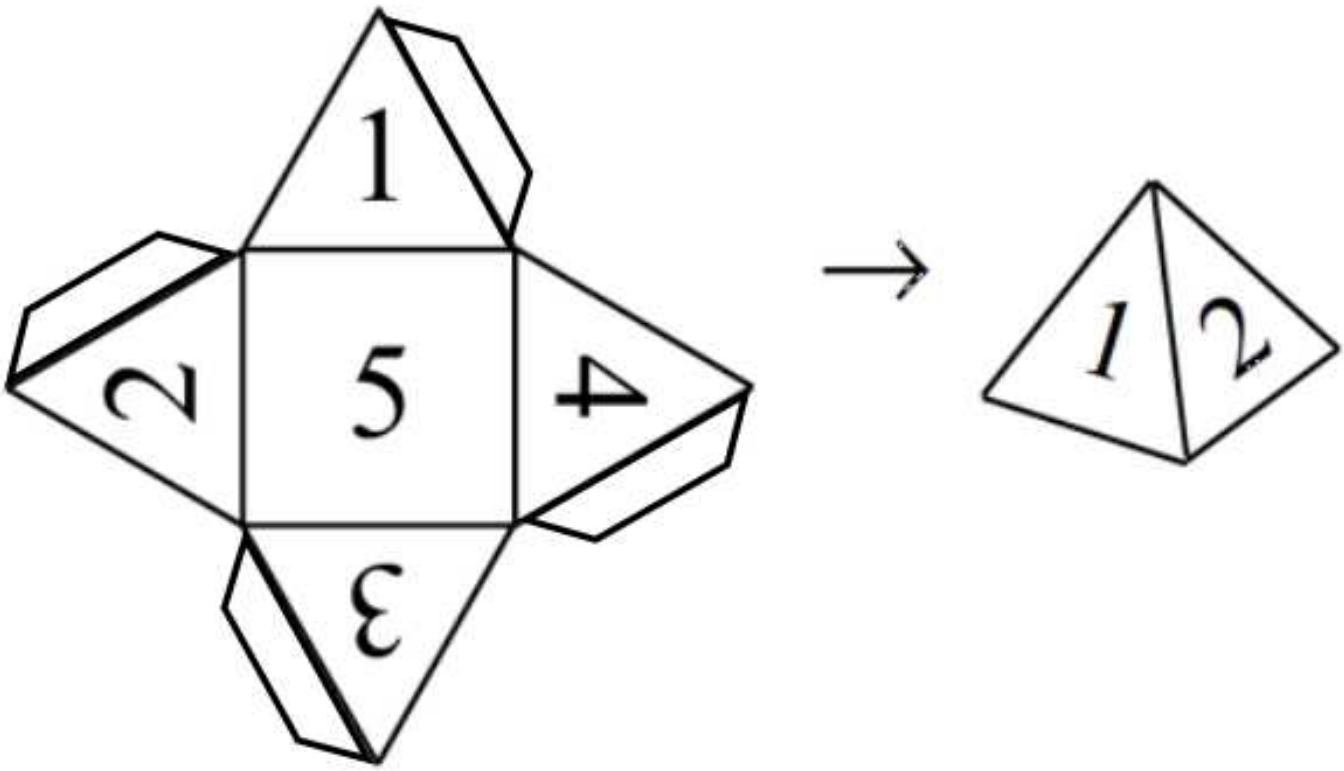
6. Compare the results with your hypotheses:

Were your hypotheses correct?

Are all numbers in the die equally probable? Why?

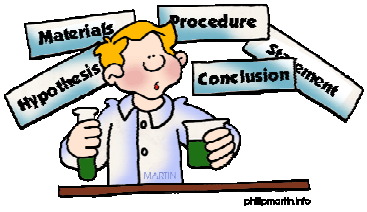
7. What's your conclusion?

A SPECIAL DIE-TEMPLATE



YOUR OWN STATISTICS AND PREDICTIONS

1. Choose which probability you want to calculate. It has to be something you can count. Write the question you want to answer:
   What's the probability of .... if/when I.....?
   Only one question, but two different answers.
   One pair=the same statistics
2. Decide how you will do it:
   a. what will you need?
   b. where will you do it?
   c. how many times will you repeat it (remember that the more repetitions, means better results, but you cannot do it 1,000 times, ok?)?
   d. how will you collect data?
   e. how will you present your conclusions?
3. Write the answers to the questions in the square below.



HINDU SNAKES AND LADDERS

FILL IN THE GAPS WITH THE WORDS ON THE WALLS

_____ and ladders is a Hindu game, originally called Moksha Patamu. You move up the board if you do _____ things (rolling the dice and going up ladders) and move _____ the board if you do bad things (going down the snake).

This is related to the Hindu idea of _____ which is the belief that there are consequences to our actions. If we are good in this life we will _____ into a better life when we die. _____ believe that if you do many good things you can escape the _____ of reincarnation and be reunited with God. They call this Moksha.

The words on the walls are:

1.
2.
3.
4.
5.
6.
7.
8.
9.
10.

down	Hindus
ladders	reincarnate
cycle	snakes
Karma	up
bad	good

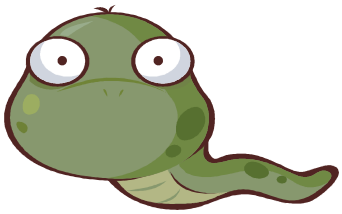
YOUR OWN SNAKES AND LADDERS

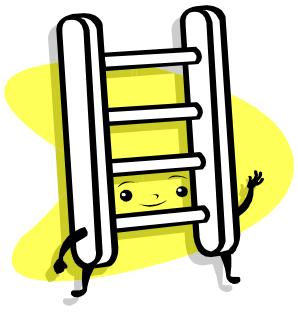
FOLLOW THESE INSTRUCTIONS TO CREATE YOUR OWN SNAKES AND LADDERS BOARD GAME:

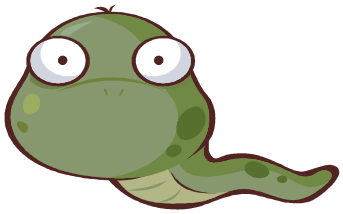
The game will show the Hindu idea of good and bad.

1. There must be an equal number of ladders and snakes.
2. Write a good thing at the bottom square for each ladder.
3. Write a bad thing at the top square for each snake.
4. Write Moskha on the finish square.
5. Remember to write the numbers on the squares.

We will be playing your board games soon! Good luck!







SNAKES AND LADDERS CHECK LIST

HAVE YOUR CLASSMATES FOLLOW THE INSTRUCTIONS? DO THEIR GAMES FOLLOW THE RULES?

		1	2	3	4	5	6
1	Is there an equal number of ladders and snakes?						
2	Is there a good thing at the bottom square for each ladder?						
3	Is there a bad thing at the top square for each snake?						
4	Is Moskha at the finish square?						
5	Are there numbers on the squares?						

WRITE A POSITIVE THING ABOUT EACH GAME:

1.

2.

3.

4.

5.

6.

ANALYSING GAMES (example)

Game				
Number of players				
What the board looks like, number of squares				
Counters				
Instructions				
What you need to do to win				
Can you cheat? Is it fair?				