

# Alice B. Beal Elementary School

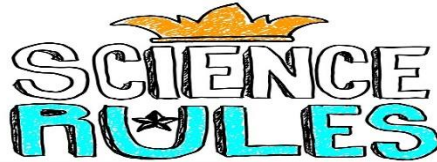


Hi, Beal Students and Families!

The schedule below will help you with your daily work. Have fun learning!

## Remote Learning Lessons for Grade: **Science Grade 5** Week 9

Week of: 6/1



Tasks:	Monday
<b>Video</b>	<a href="https://mysteryscience.com/astronomy/mystery-8/star-brightness-habitable-planets/294?code=MTY5OTU3MDA&amp;t=student">https://mysteryscience.com/astronomy/mystery-8/star-brightness-habitable-planets/294?code=MTY5OTU3MDA&amp;t=student</a>
<b>Questions</b>	Could there be life on other planets? In this Mystery, students discover that the Earth is in the "Goldilocks Zone" — a distance from the Sun with the right amount of light and heat for life to exist. In the activity, Star Explorer, students plan a space mission to another planet outside our Solar System based on the amount of heat and light that reaches the planet's surface. Once students plan their space mission, they will reflect on what our Sun would look like from this far-away planet.
<b>Activity</b>	<ol style="list-style-type: none"><li>1. Today we will learn about the "Goldilocks Zone" — the area around a star that gets just the right amount of light and heat for life to exist. We explored different solar systems to find a planet with conditions similar to Earth. Then we planned a space mission to visit that planet!</li><li>2. You and your child can visit another planet together! [You can virtually stand on the surface of far-away planets using your mobile device] (<a href="https://exoplanets.nasa.gov/alien-worlds/exoplanet-travel-bureau/">https://exoplanets.nasa.gov/alien-worlds/exoplanet-travel-bureau/</a>)</li><li>3. Watch mystery answering questions as you go.</li><li>4. Experiment: Do the experiment taking pictures as you go if you have the equipment. If you need to improvise please do. You need: scissors, handouts, end-of-mystery assessment, end-of-unit assessment</li><li>5. Check Shading on the Worksheets: The Mission Plan worksheets include greyscale shading that indicates the amount of heat and</li></ol>

	<p>light that emit from each star of the three solar systems. The correct shading is essential for the activity, so we suggest printing out copies of these worksheets beforehand to ensure that everything prints correctly.</p> <ol style="list-style-type: none"> <li>Teacher Tips: The solar systems and stars (Malina, Thea, and Helios) used in the activity are fictional, but they were inspired by real scientific discoveries. If you and your students would like to learn more about real stars and exoplanets that astronomers are investigating, there are several resources in our Extras section for you to explore.</li> <li>Follow the mystery with the instructions of the activity.</li> <li>Complete end-of-mystery assessment.</li> <li>Complete end-of-unit assessment.</li> </ol>
<b>Tasks:</b>	<b>Tuesday</b>
<b>Video</b>	<a href="https://mysteryscience.com/chemistry/mystery-1/chemistry-conservation-of-matter/166?code=MTY5OTU3MDA&amp;t=student">https://mysteryscience.com/chemistry/mystery-1/chemistry-conservation-of-matter/166?code=MTY5OTU3MDA&amp;t=student</a>
<b>Questions</b>	<p>Are magic potions real? In this Mystery, students meet the alchemists, a historic group that used "potions" to try to transform materials. In the activity, Test Like An Alchemist, students test liquids to see which ones will clean the tarnish off a penny. Then, when one penny changes from dark and dirty to bright and shiny, they'll have a chance to think about where the tarnish went.</p>
<b>Activity</b>	<ol style="list-style-type: none"> <li>Today we begin our review on chemical reactions with the Mystery, "Are magic potions real?" We will learn about the alchemists, a historic group of people famous for mixing different substances. In our activity, we will experiment like alchemists to figure out which liquids could change the appearance of dull copper pennies.</li> <li>Here's something you can try at home: find some old pennies, and invite your child to show you how to clean them. All you need is vinegar, salt, and dull copper!</li> <li>Experiment: Do the experiment taking pictures as you go if you have the equipment. If you need to improvise please do. You need: clean-up supplies, liquid soap, scotch tape, measuring cup, measuring spoons, plastic container with lids, salt, white vinegar, pennies, steel nails, handouts, end-of-mystery assessment</li> <li>You will need access to water for this activity.</li> <li>You will need old, tarnished pennies for this activity. You must use pennies dating from BEFORE 1982, when they were made from 95% copper. (Pennies made after 1982 are copper-plated zinc, which won't work for this activity.)</li> </ol>

6. Optional: Orange and brown crayons for coloring dull and shiny pennies on worksheets.
7. In the next Mystery, you'll need to reuse some of the materials from this Mystery so students can copper plate a steel nail. See instructions below.
8. Prepare Your Testing Liquids: Cut out the Container Labels and tape one to each of your four plastic containers. You now need to prepare you can make 1 cup of each solution. When you set up your stations, just cut the following "recipes" in half.
9. Soapy Water Station: Mix 2 tablespoons liquid soap (or detergent) with 2 cups water.
10. Vinegar Station: Pour 2 cups of vinegar.
11. Salt and Vinegar Station: Mix 6 tablespoons salt with 2 cups vinegar. The salt won't all dissolve, but add it anyway.
12. Salty Water Station: Mix 6 tablespoons salt with 2 cups water. The salt won't all dissolve, but add it anyway.
13. Save Materials and Prepare for the Next Mystery
14. Save student work: Students will need their completed "Alchemist's Potion, Part 1" printouts for the next Mystery. Make sure they're stored somewhere safe.
15. Save the pennies in the Salty Vinegar solution: At the end of this Mystery, you'll dump all the pennies into the Salty Vinegar to soak overnight. (If you made just 1 cup of Salty Vinegar, dump at least 20 pennies into it.)
16. Add a nail: After students have left class, we recommend that you put a nail into the Salty Vinegar solution with the pennies — but don't tell your students you're doing it. You'll find out why in the next Mystery, when your students will discover that the solution the pennies soaked in can change steel in a surprising way.
17. Follow the mystery with the instructions of the activity.
18. Complete end-of-mystery assessment.

Tasks:

**Wednesday Must Do**

**Video**

**StemScopes: Content Connections Video-Food Chains.**

**Questions**

**How do food chains work?**

**Activity**

1. Log onto StemScopes through the Student Applications.
2. Go to Assignments.
3. Click on Content Connections Video-Food Chains.
4. Watch video and pause when it asks you questions and discuss the answers.
5. Rewatch video answering questions as you go.

***These are the review challenge assignments for this week. Go to STEMscopes and complete the questions on the following assignments. Let's see how many shout outs I can give this week. Send me a message when you are finished. If you think you have finished already check to make sure I have not returned anything to you.***

- 1. Content Connections Video-Food Chains (2)***
- 2. Reading Science B-Thanks to the Sun***
- 3. Content Connections Video-Parts of a Plant***
- 4. Content Connections Video-Parts of a Plant-Did You Know?***

***I have posted a list of websites on the [bealelementary.org](http://bealelementary.org) page. Please choose activities that your child would like to explore. Please pick an activity from the list to do with your scientist each day that you don't do an assignment. Have fun and stay curious.***

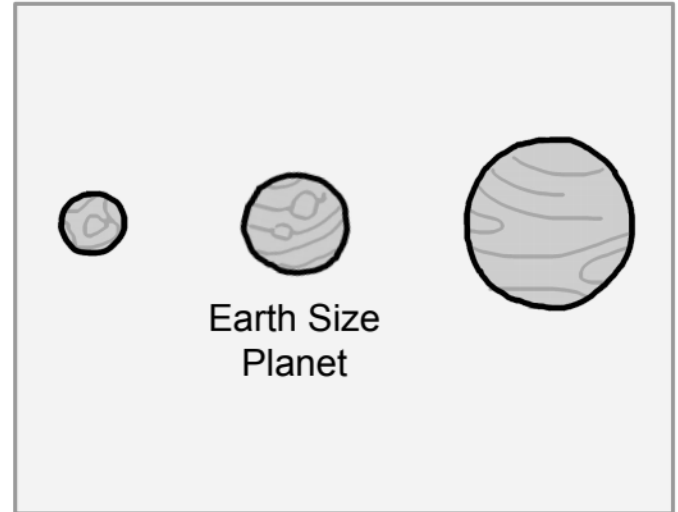
# Gravity Guru

## (Physicist)

Gravity is the invisible force that pulls us towards the Earth. All other planets also have gravity.

The more massive a planet is, the more gravity it will have. So planets that are larger than the Earth will usually have more gravity.

If there is too much gravity, it may be extremely difficult to move and walk around on the surface of the planet. More gravity will also make it more challenging for plants to grow.



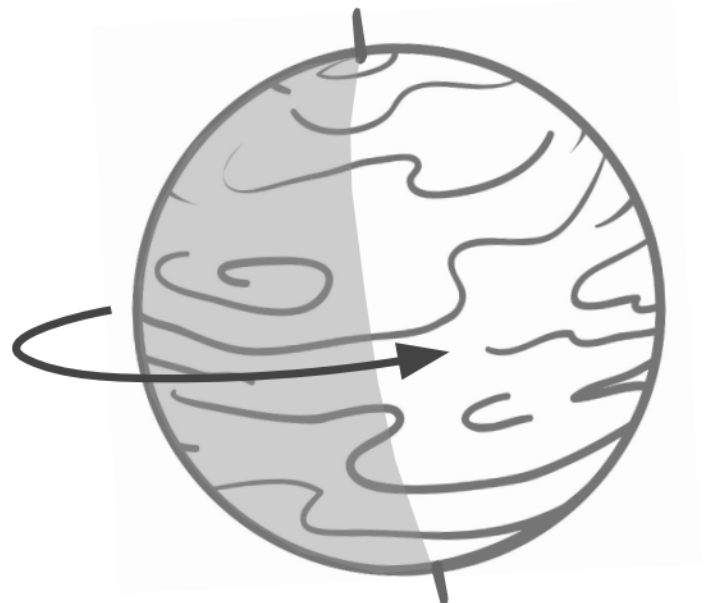
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# Spinning Specialist

## (Astronomer)

The Earth completes one spin, or rotation, around its axis once every 24 hours. The Earth's spin is the reason we have day and night. Other planets also rotate. But other planets may rotate slower or faster than the Earth does.

Planets that are close to their star usually rotate very, very slowly. This means that one day on these planets will be extremely long. This may create problems for plants that need light because they will spend too much time in the dark.



# The Alchemist's Potion

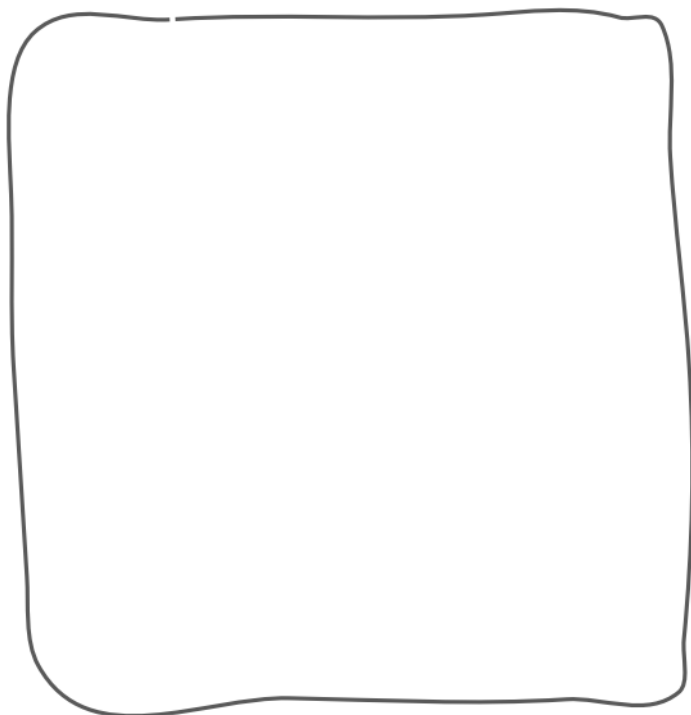
## PART 1

Name: \_\_\_\_\_

Date: \_\_\_\_\_

### My Initial Model

**1a)** In the box below, draw a picture of what you think happened to make the dull penny become shiny. It's ok if it's just a guess for now. Label your drawing. If you want, include things that are too small to see.



**1b)** Figuring out why the penny became shiny is tricky. Can you think of questions about the pennies and liquid that will help you figure it out?

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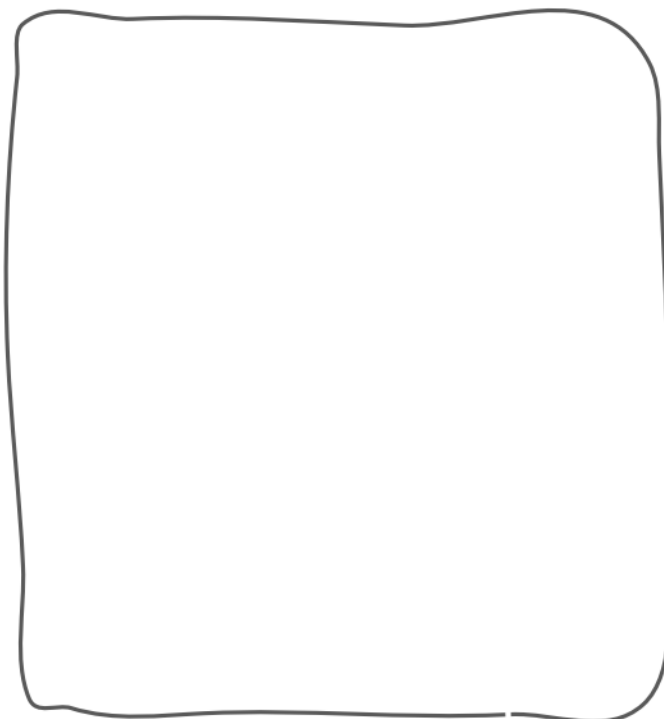
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### My Revised Model

**2a)** Your ideas might have changed since your last drawing. In the box below, draw what you think happens when dull brown copper pennies get shiny. Label your drawing. If you want, include things that are too small to see.



**2b)** Explain your drawing: \_\_\_\_\_

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You'll fill in Part 2 of this worksheet on another day, when you do the next Mystery

# ACTIVITY PREP:

## Bowl Labels

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As part of your activity prep:

- Cut out these labels.
- Tape them on or beside the bowls of testing liquids.



**Soapy Water**

**Vinegar**

**Salt & Vinegar**

**Salty Water**

# ACTIVITY PREP: Bowl Labels

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# Test like an alchemist

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What happens to a copper penny when you dip it in...



**Soapy Water**



**Vinegar**



**Salt & Vinegar**



**Salty Water**



# Chemical Magic

Name: \_\_\_\_\_

Date: \_\_\_\_\_

Mystery 1: Are magic potions real?

## End of Mystery Assessment

1. How can you make a dull penny shiny again?

- a. Leave it in salt water
- b. Wash it with soapy water
- c. Dip it in vinegar and salt

2. Three friends are talking about what they think causes shiny pennies to turn dull.

Deandre says, "I think they turn dull because they're exposed to the air over time."

Jamie says, "I think they turn dull because they get dirt on them from being dropped on the ground."

Selina says, "I think there is dull metal inside the penny the entire time."

Who do you agree with most and why?

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3. Why did we dip only one half of each penny into the different liquids in our experiment?

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4. In your own words, who were the alchemists? What do you know about them and their work so far?

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