

*Watson Ranch
Elementary Science*

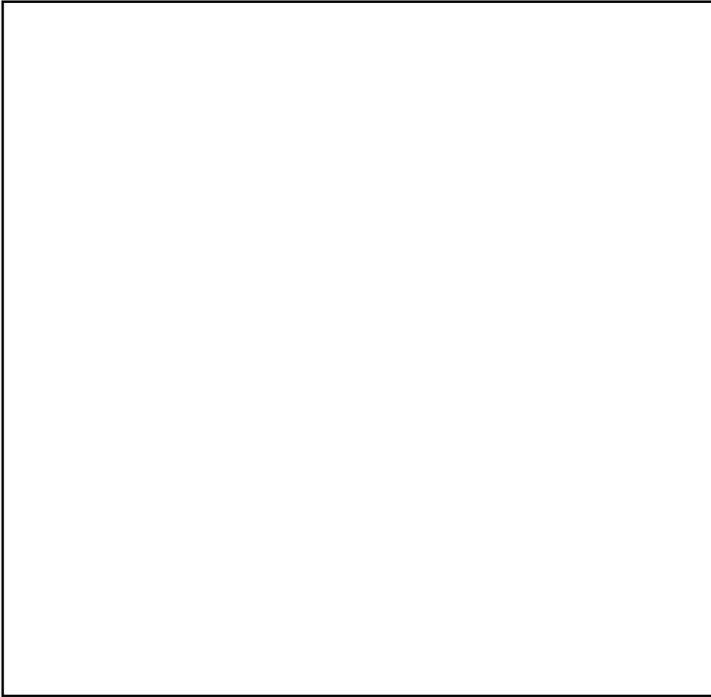
Science in the Beginning

*Lab and Review
Book*

LEVEL 1

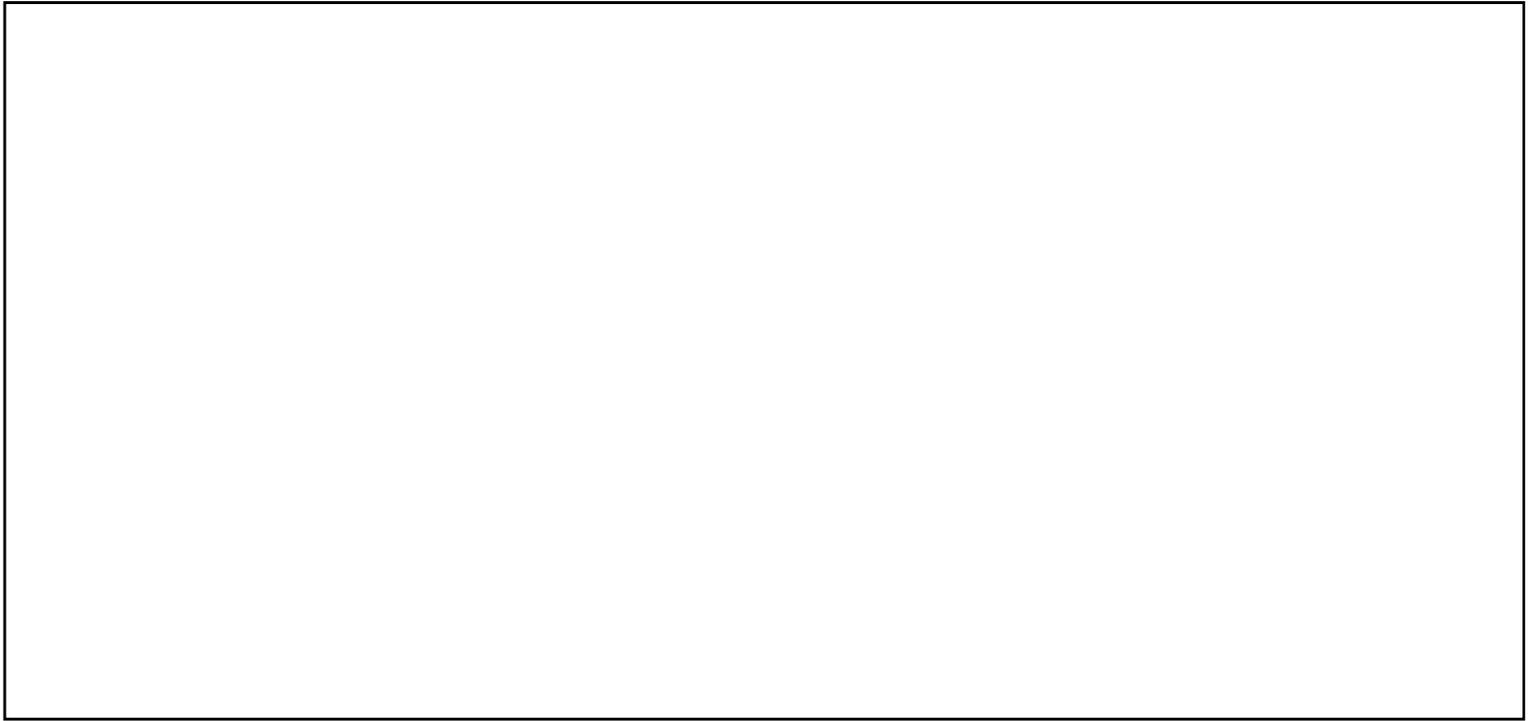
Property of:

1. What does it mean for light to reflect off something? Draw a picture and write what it means.



2. Why can't you see anything in a completely dark room?

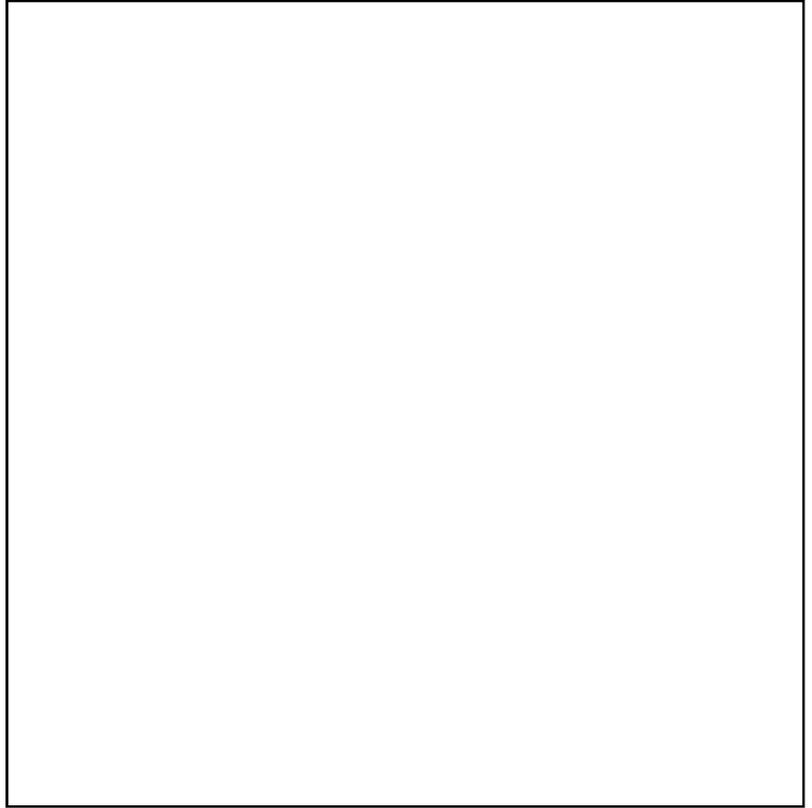
1. Draw a rainbow in the box below, putting the colors in the proper place, as is pictured on page 5. Label each color:



2. What is Mr. White Light's name?

3. What does his name tell you about the colors of light?

1. Draw a red rose sitting on a table in a vase and a person looking at the rose. Draw a light bulb above the rose, and then draw seven arrows coming from the light and hitting the rose. Each arrow should be one of the basic colors of the rainbow. Now draw one red arrow reflecting off the rose and hitting the person's eye.



2. What do the seven arrows in your drawing represent?

3. What does the red arrow hitting the person's eye represent?

1. List the four kinds of energy you learned about today. Either paste a picture next to what you wrote down or draw something that illustrates that particular form of energy.

1. Energy cannot be _____ or _____. It can only be _____ from one form to another.

2. What do we call the statement above?

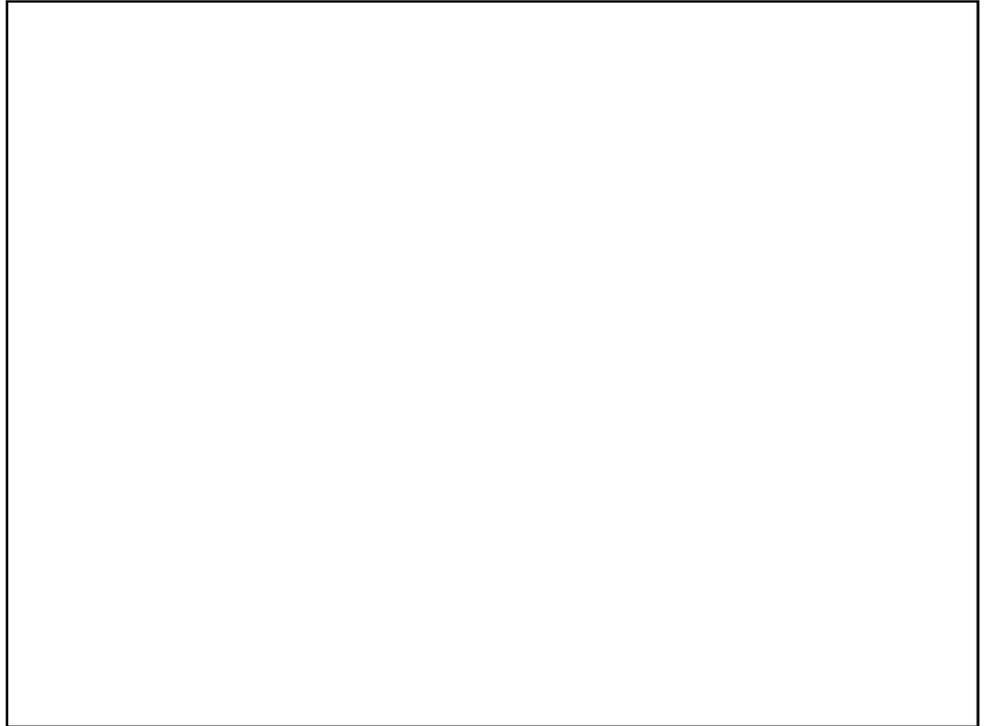
3. How does it explain your experiment?

1. The light we can actually see is called _____

_____.

2. Make a drawing of what happened in the first experiment.

Draw the television, the remote, and the paper, and use arrows to show where the infrared light from the remote went so it could turn on the television.

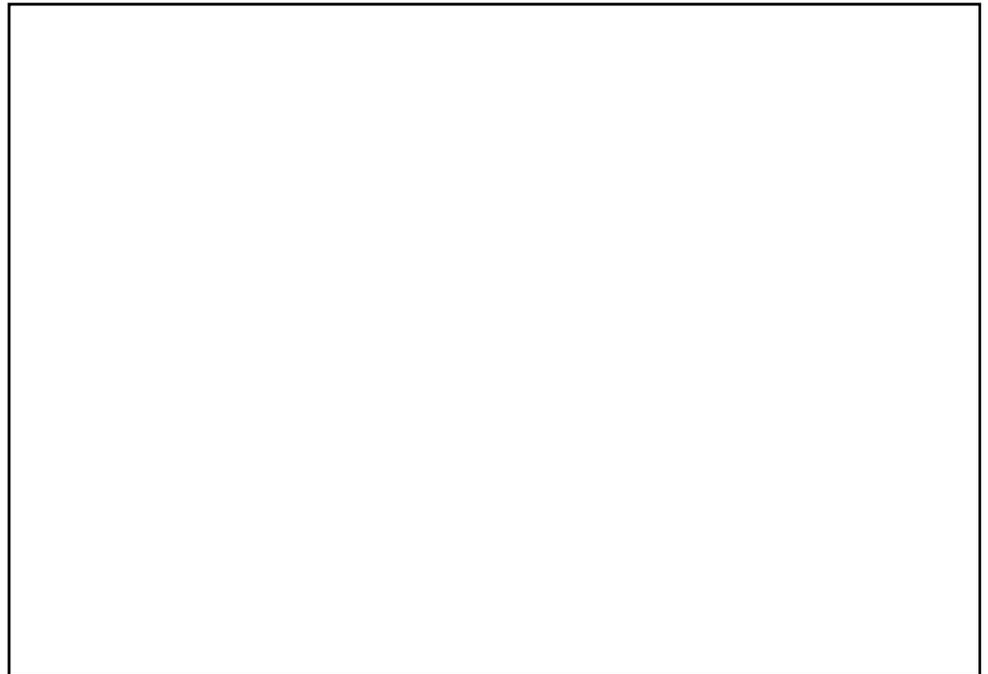


3. What would happen if you pointed the remote at the television but someone stood in between the remote and the television. Would the remote turn on the television? Why or why not?

1. The lens of your eye focuses the light that passes through it onto the _____.

2. The job of the rods and cones is to detect _____. They are located on the _____.

3. Make your own drawing of the eye, based on the one you see on page 25. Label the cornea, lens, retina, and optic nerve. Also, point out in the drawing where the blind spot is.

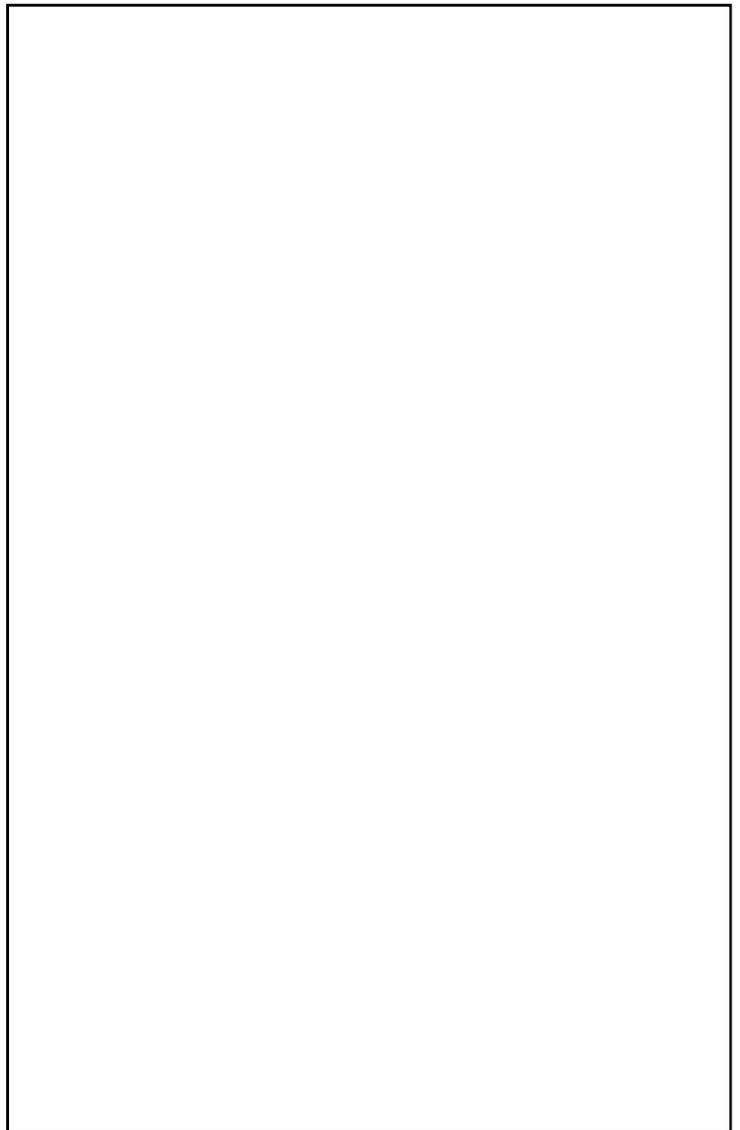


4. Explain why it is a blind spot.

1. When light hits something, it can be reflected, absorbed or

_____.

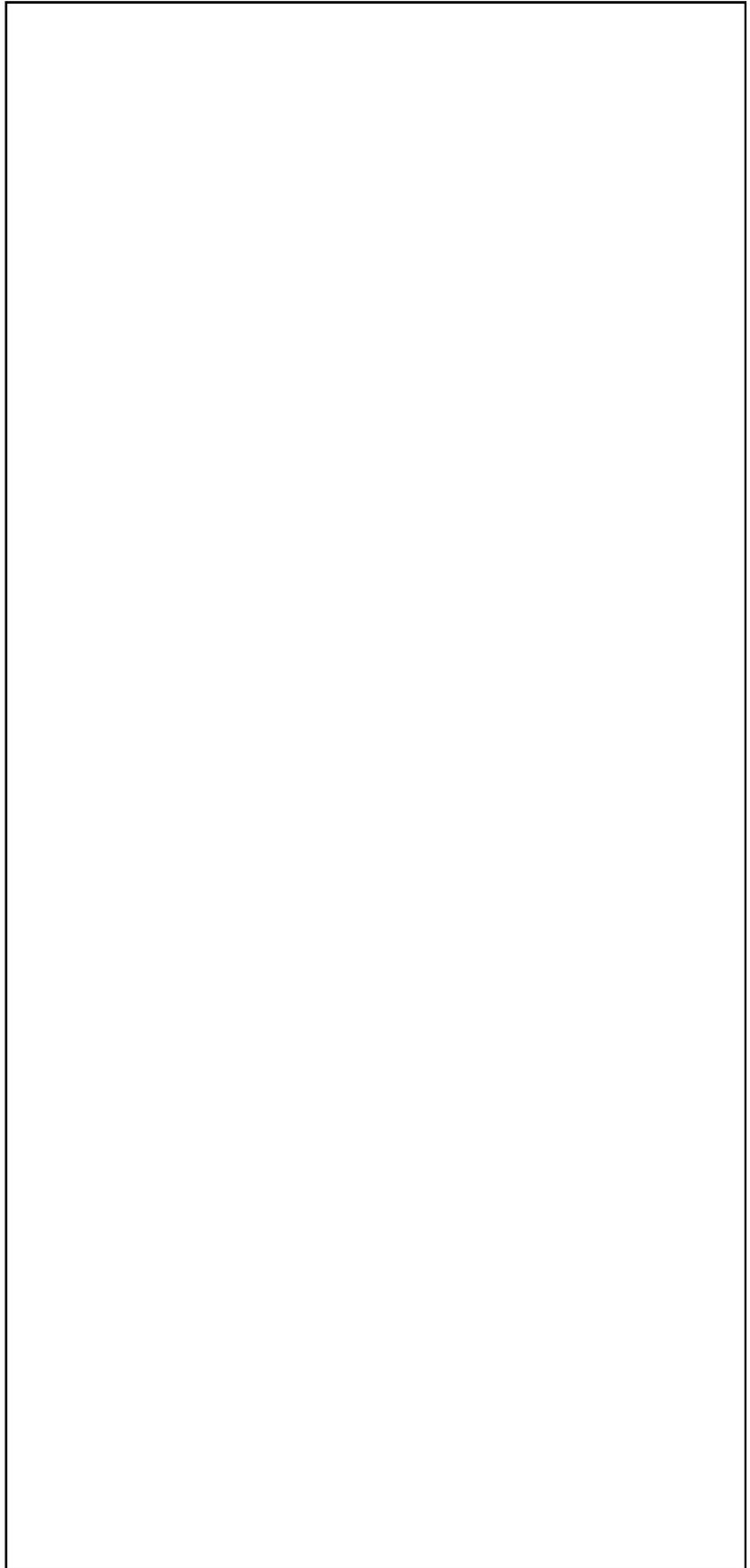
2. Make two drawings of what happened in the experiment. Start with a view of the bowl from above, where you saw the fork lying on the bottom of the bowl. Use arrows to represent light, showing what the light had to do for you to see the fork. Then make a similar drawing of what happened when you looked at the surface of the water from below.



1. It is dark outside and light inside. When you look out a window, will you see your reflection or whatever is outside?

2. A friend is staying with you, and she wants to scare your little brother by waiting until night and standing outside his bedroom window. She will shine a light on her face to make him think she is a ghost. You tell your brother to keep all his lights on when he is in his bedroom. Why will this keep him from being scared by your friend?

1. Draw a side view of the experiment you performed. Draw the bottle, a stream of water coming out of the bottle, and the flashlight. Make sure the stream of water is thick enough that you can draw inside it. Draw two arrows (for light) coming out of the flashlight and going straight until they hit the edge of the stream. Draw one arrow leaving the stream. Draw the other arrow reflecting back into the stream. Each arrow you draw must be straight. For the arrow that goes back into the stream, draw it straight until it either reaches the end of the stream or hits the edge of the stream. If it hits the edge, draw it reflecting into the stream again. Continue to draw straight arrows reflecting over and over until you reach the end of the stream. That's what happened to the light that made it to your hand in the experiment.



Lesson 13

This is a challenge lesson, so I want to challenge you to make your own notebook page for it!

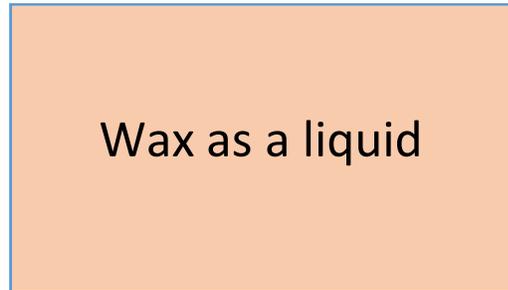
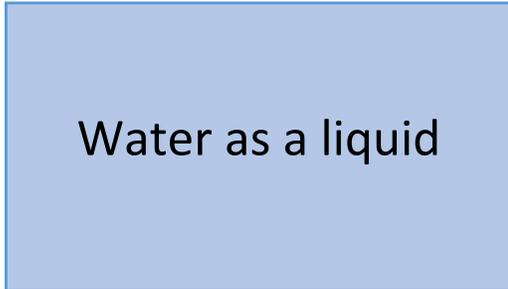
Lesson 14

This is a challenge lesson, so I want to challenge you to make your own notebook page for it!

Lesson 15

This is a challenge lesson, so I want to challenge you to make your own notebook page for it!

1. The two rectangles below represent water and wax as liquids. Below each rectangle, draw a rectangle that represents the same substance as a solid. Label the rectangle “_____ as a solid.” The size of the rectangle should show the difference between the phases.



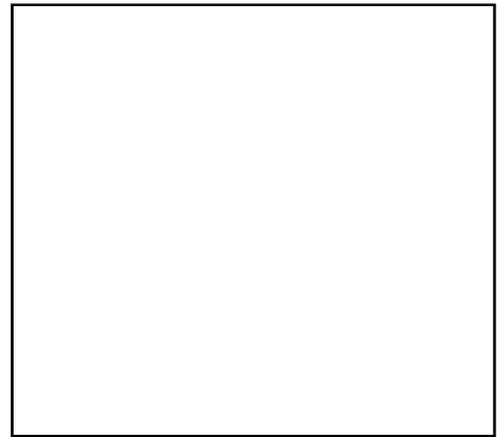
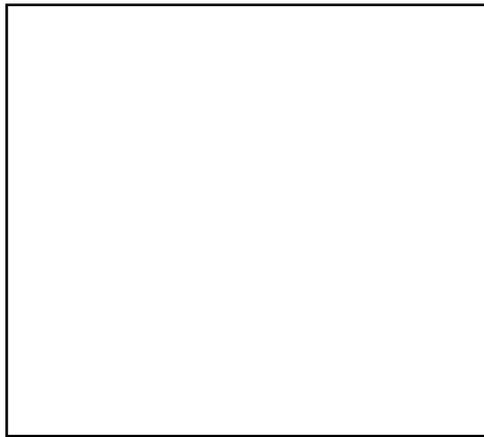
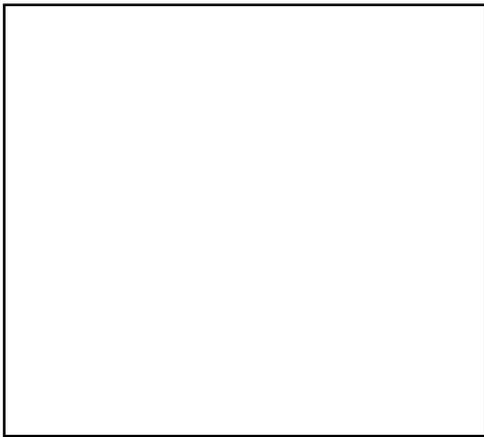
2. How do the rectangles show what happens when water and wax freeze?

1. Draw two squares in the container of water on the right . One square should be at the bottom of the container, while the other square should be floating in the water. Assume both squares weigh the same, which means they have to be two different sizes. Use the fact that one sank and the other is floating to determine which should be drawn smaller and which should be drawn larger.



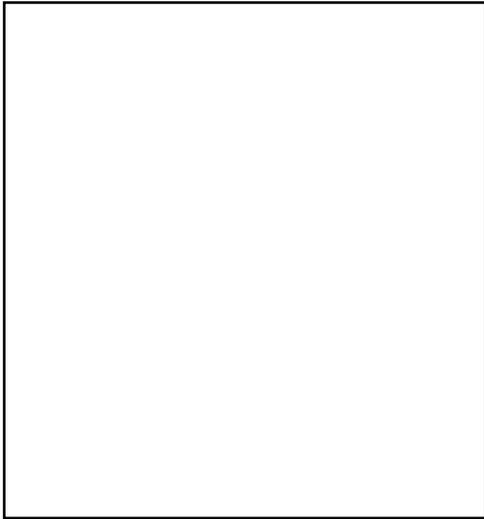
2. Explain why you drew the sizes the way you drew them

1. In the first box below, draw a cloud forming over a lake. Use wavy lines to represent water vapor rising. In the next box, draw the cloud heavier (darker) and moving away from the lake. In the last box, have the cloud nowhere near the lake and raining.

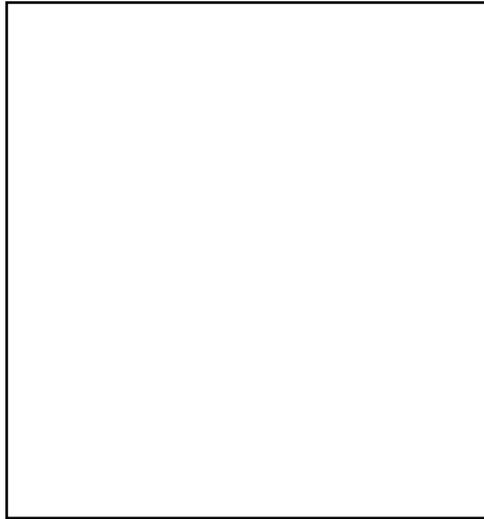


2. What do these drawings illustrate?

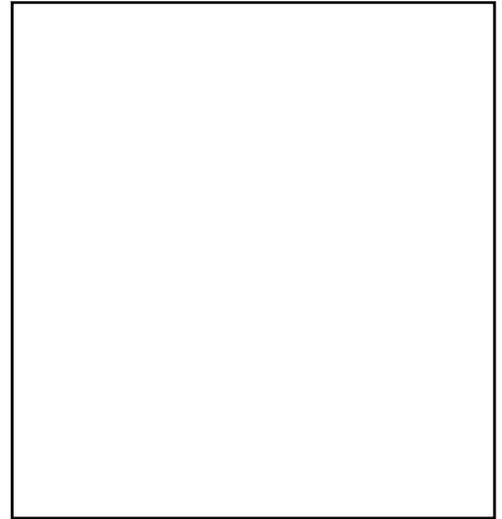
1. In the boxes below, draw a glass with a battery and water. Draw bubbles that represent what you saw in your experiment.



No Epsom Salt



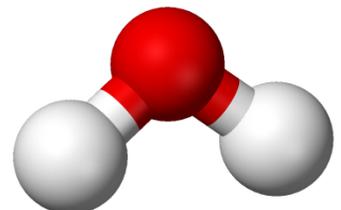
Some Epsom Salt



More Epsom Salt

2. Where did the bubbles come from and what is in them?

3. The drawing on the right is of a water molecule. Label each atom as oxygen (O) or hydrogen (H).



1. Make two drawings of what happened in the experiment: One before the bottle and balloon were heated and one after.



2. Explain the results you just drew.

Lesson 28

This is a challenge lesson, so I want to challenge you to make your own notebook page for it!

Lesson 29

This is a challenge lesson, so I want to challenge you to make your own notebook page for it!

Lesson 30

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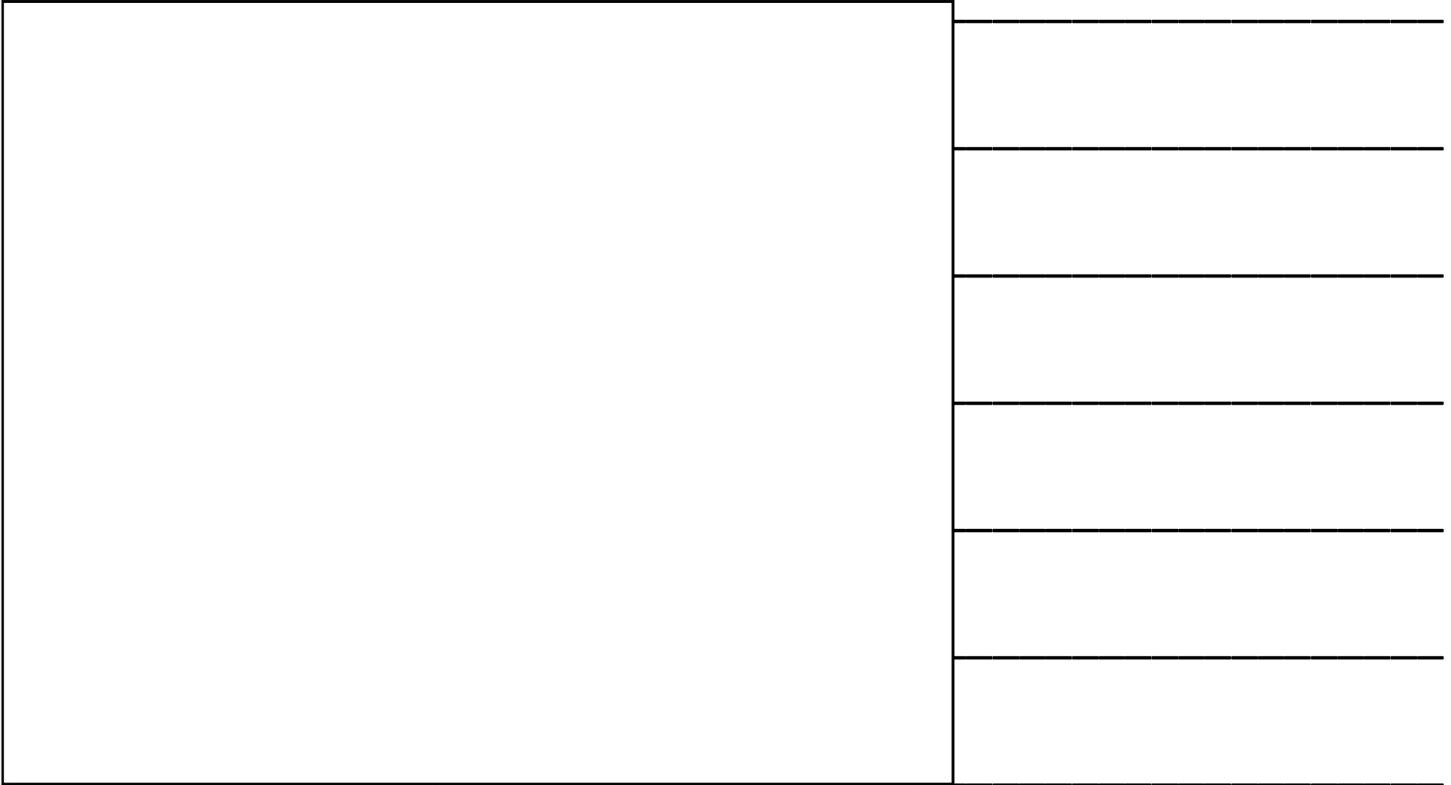
1. When a leaf starts to rot away so that it looks like dirt, we say the leaf is starting to _____.

2. Technically, dirt and soil are the same thing: True **OR** False

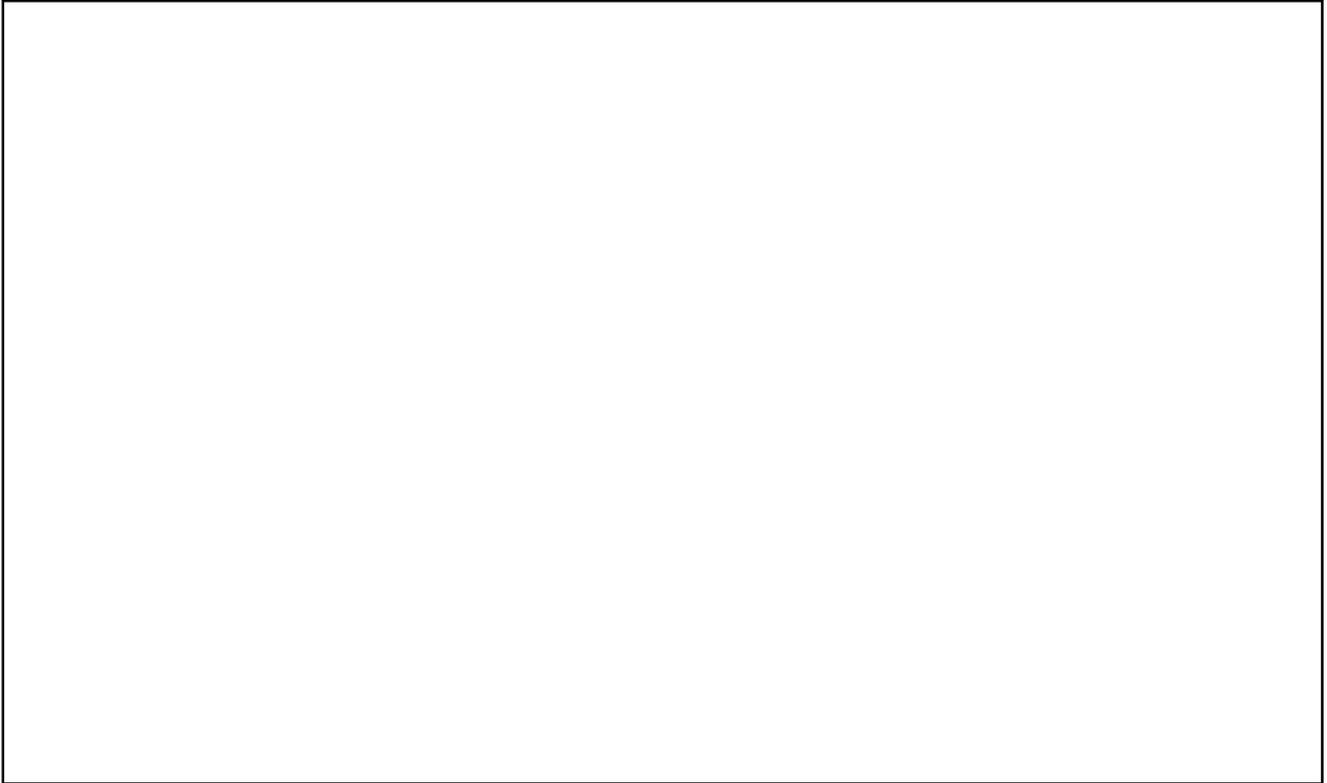
3. What is humus?

4. How does humus relate to soil?

1. Make a drawing like the one on page 101 and use it to explain the rock cycle.



1. Make a drawing of the glass as it looked in step 11 of the experiment. Label which layer has freshwater and which layer has saltwater.



2. Why did the layers form that way?

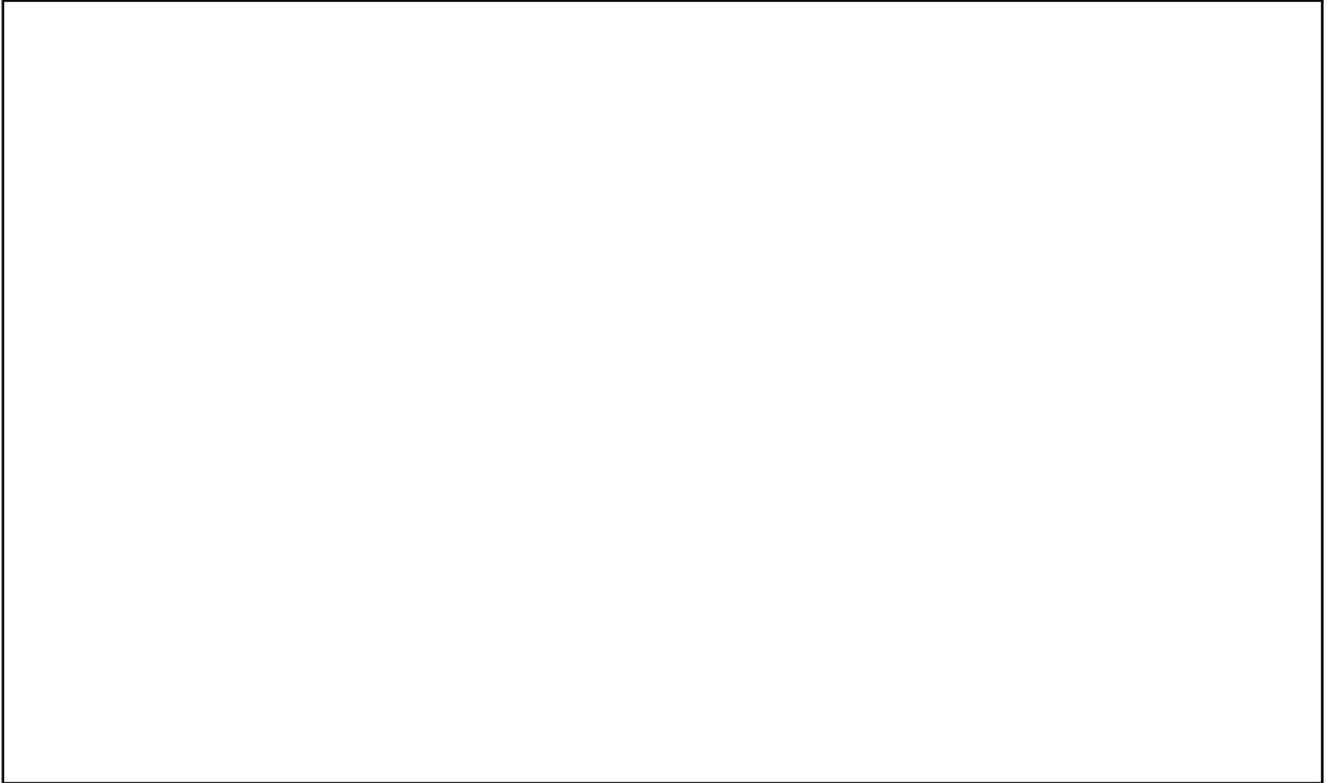
1. If you make an educated guess about what will happen, you are forming a _____.
2. _____ - _____ means the opposite of what we expect based on what we know.

3. Write down your hypothesis from your experiment:

4. Was your hypothesis correct? _____

5. Give an explanation for the results of the experiment:

1. Draw a picture of your opened-up bean seed, labeling the cotyledons and the embryo.

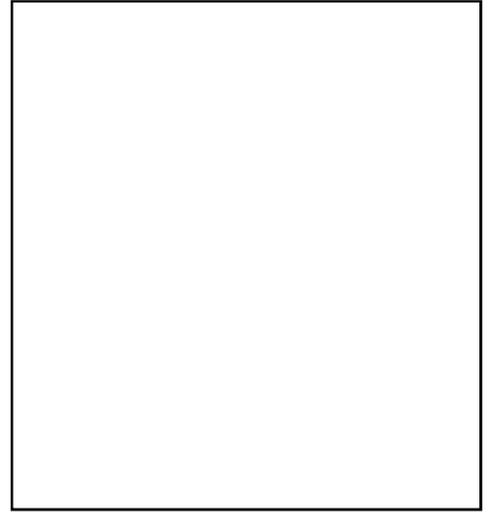
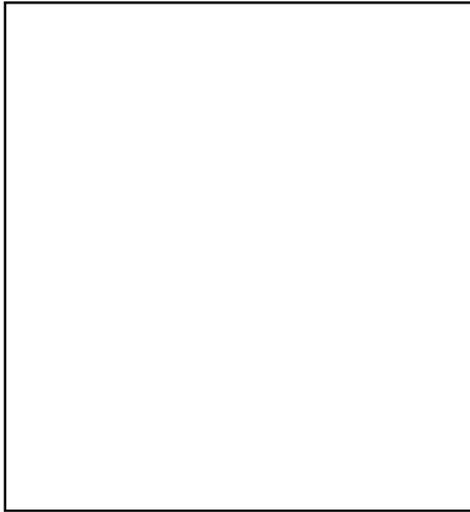
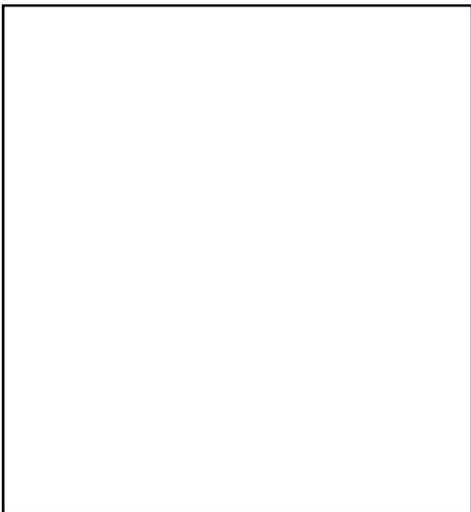
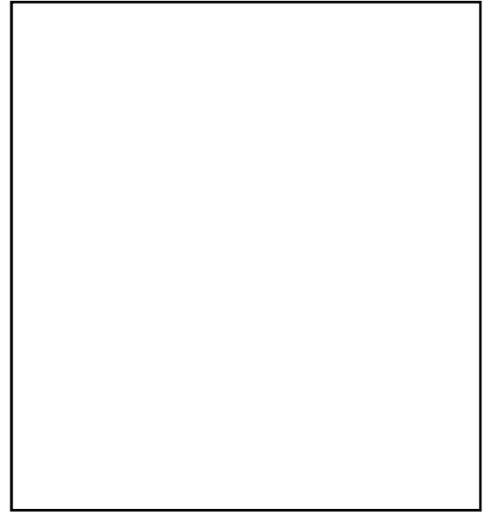
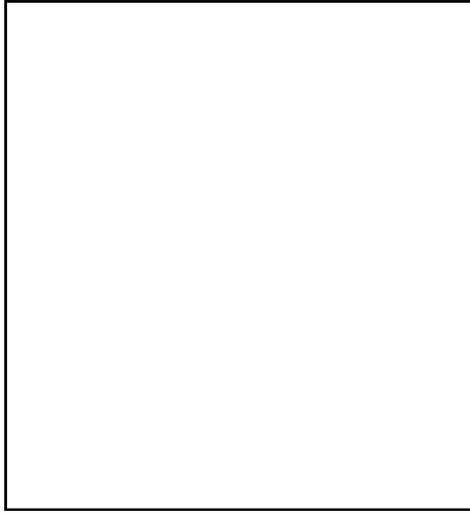
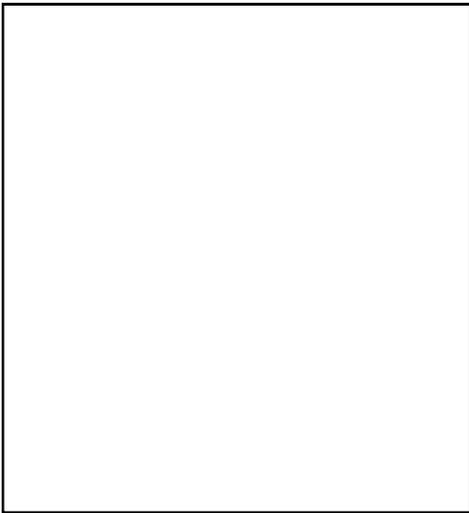
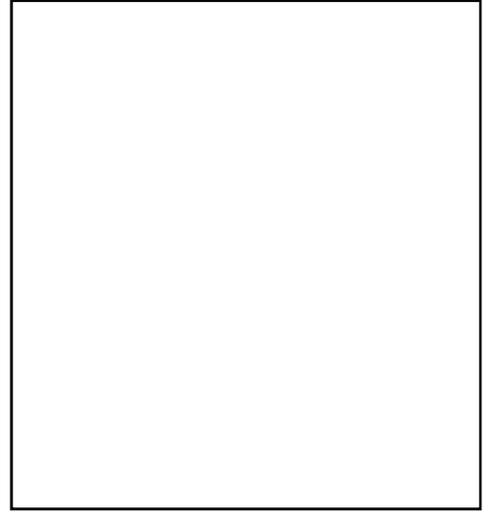
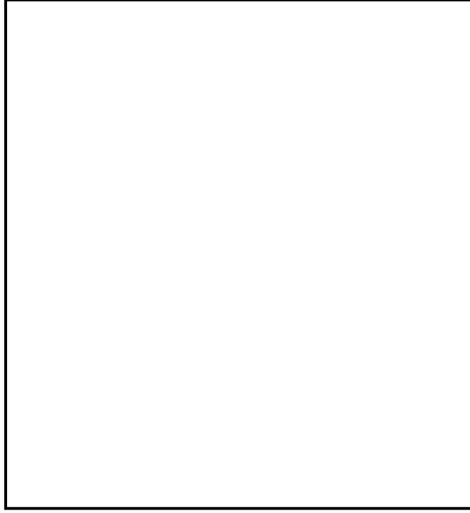
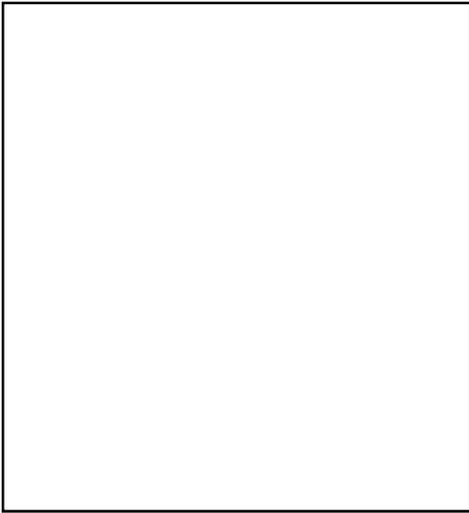


2. What are the cotyledons for, and what will the embryo will end up becoming?

Section 3: Science in the Third Day of the Creation Week Level 1

Lessons 39-41

Record your drawings of the germinating seeds over the next several days in the boxes below.



The Germination of a Seed

Step 1: _____

Step 2: _____

Step 3: _____

Step 4: _____

Step 5: _____

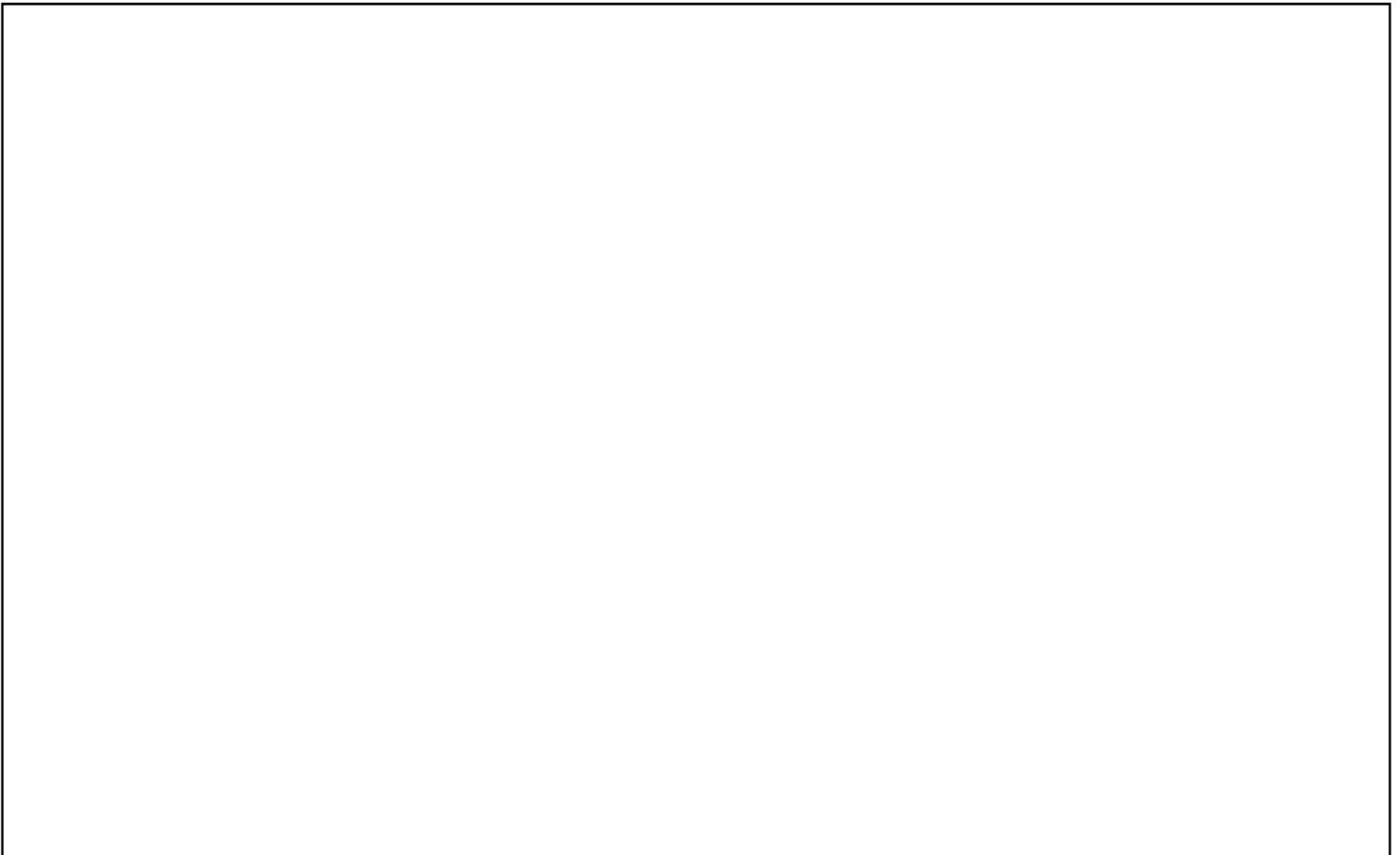
Step 6: _____

1. The process that a plant uses to make its own food is called

_____.

2. What are the 3 things a plant needs to make its own food?

3. Draw a plant showing its roots, stem, and leaves. Label those three things and explain the job of each.



Lesson 43

This is a challenge lesson, so I want to challenge you to make your own notebook page for it!

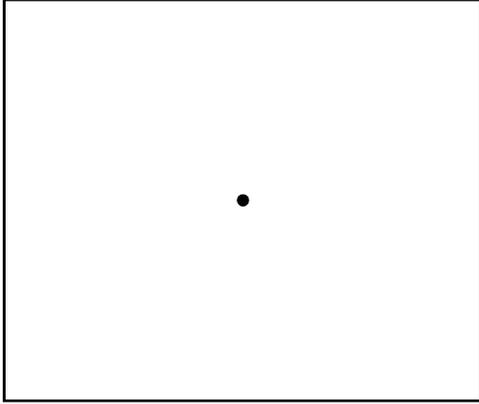
Lesson 44

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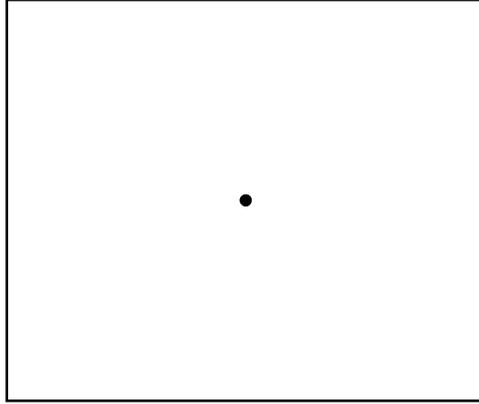
Lesson 45

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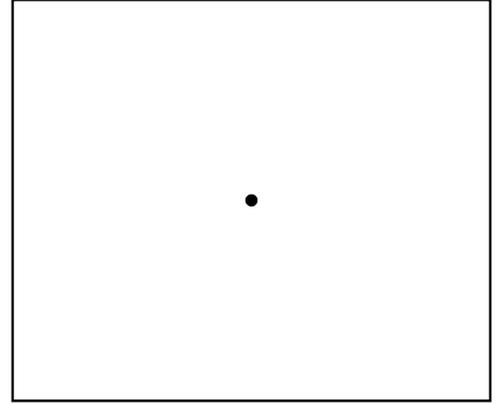
1. Draw what happened in your experiment in the boxes below. Imagine the pictures if you were looking down on them from above. The dot represents the toothpick.



1st Shadow



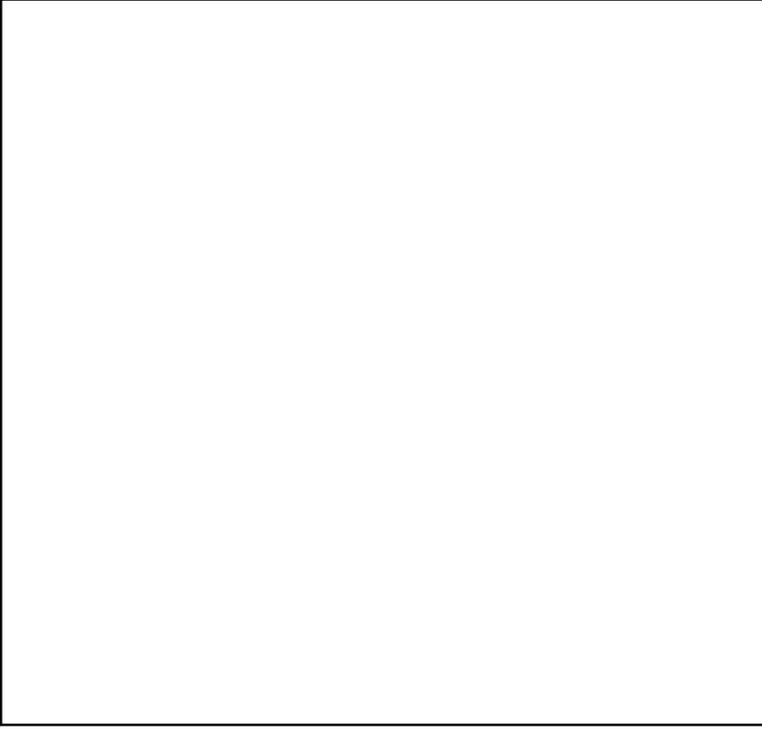
2nd Shadow



3rd Shadow

2. Why did both the length and position of the shadow change?

1. Draw a sundial whose gnomon's shadow indicates that it is 11 AM and explain how a sundial tells time.

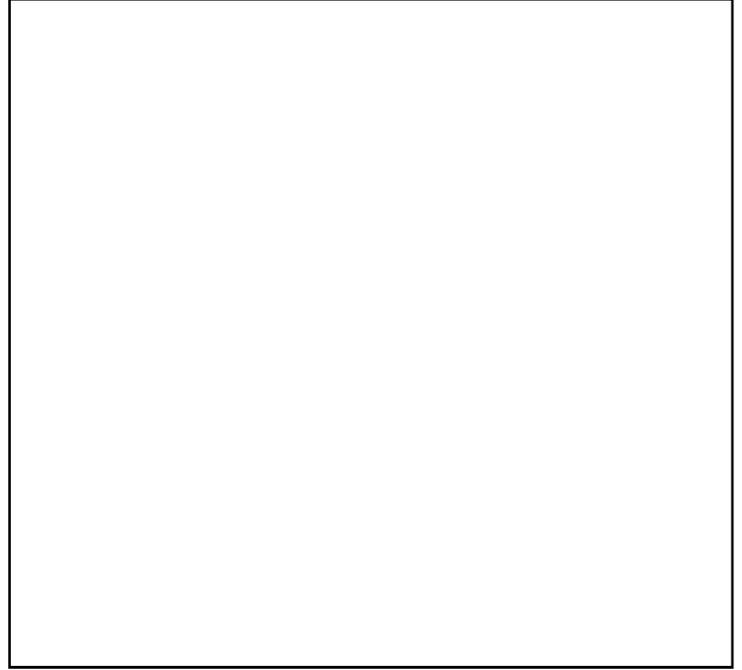
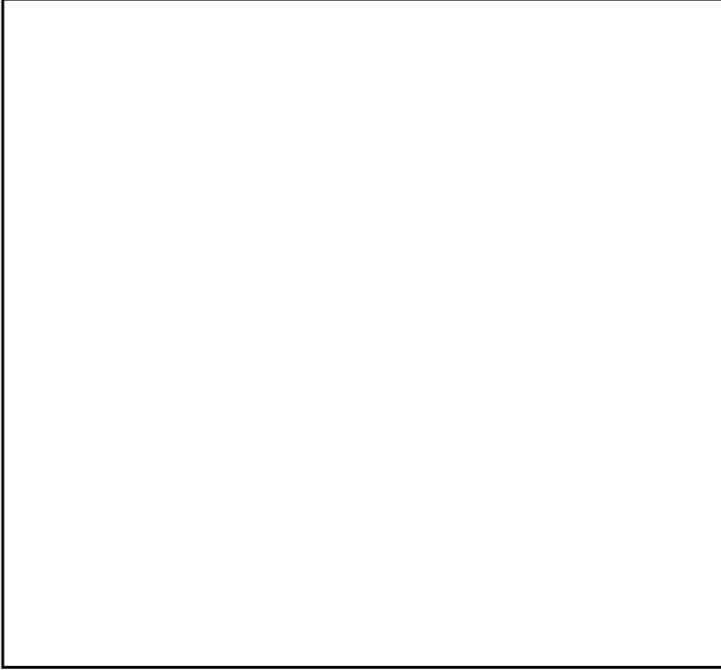


2. When is the sun highest in the sky?

1. Make a drawing that illustrates why a sunset looks yellow, orange and red. Explain it.



1. Make two drawings. One should show how the sun orbiting the earth could cause night to turn to day. The other should show how the rotation of the earth and a stationary sun could do it.

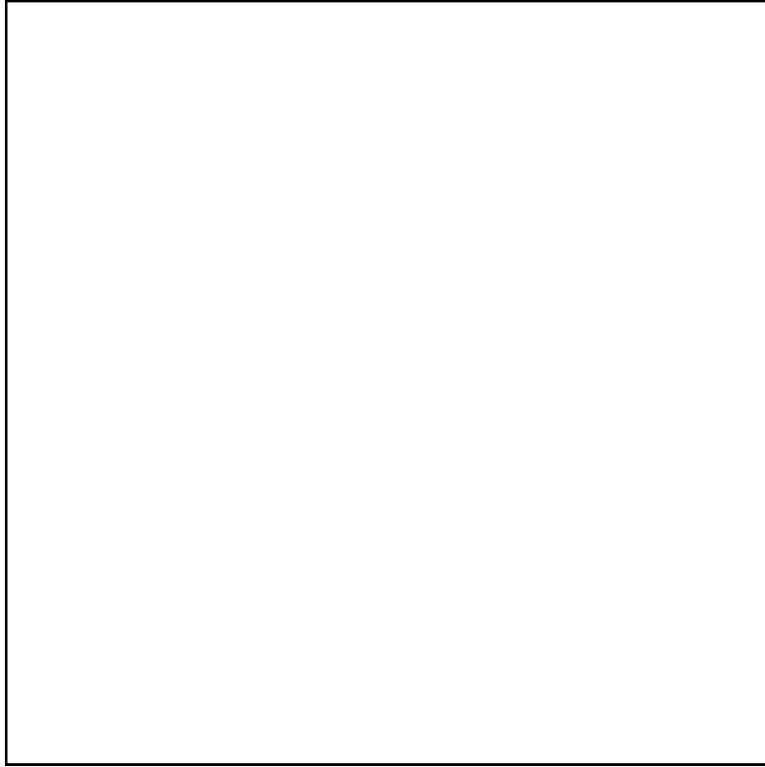


2. Circle the drawing that shows what actually happens.

3. We don't feel the earth moving because everything else is

_____ too.

1. Make a drawing of the earth orbiting the sun and rotating.

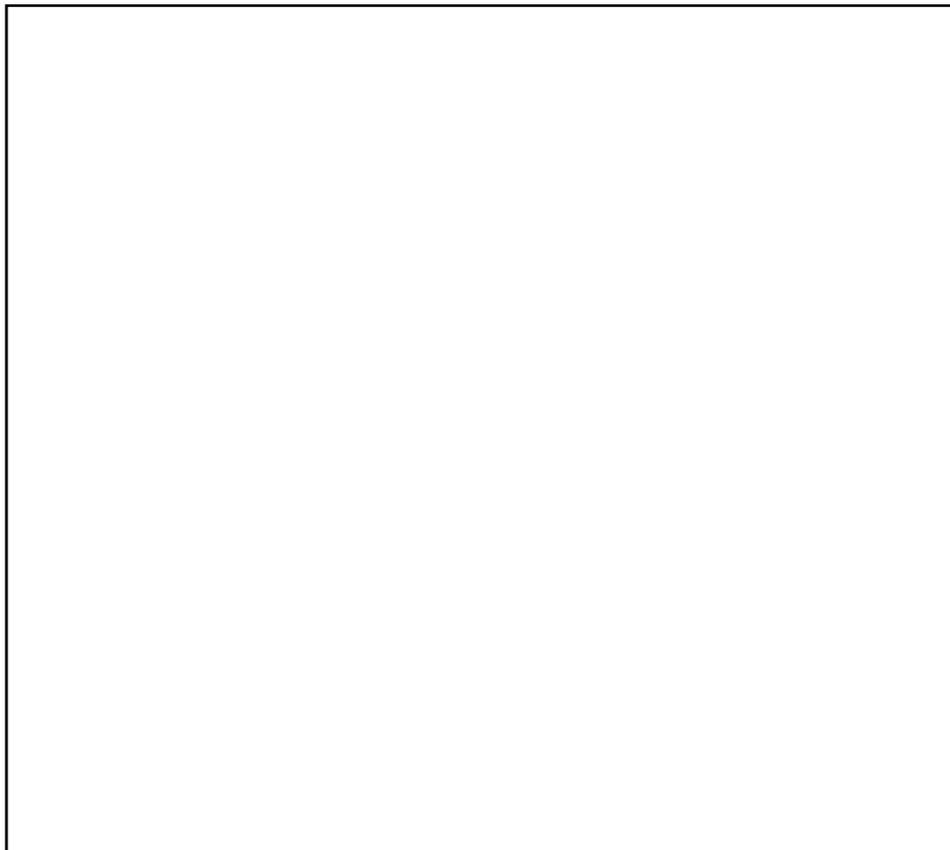


2. It takes _____ for the earth to make one full orbit around the sun.

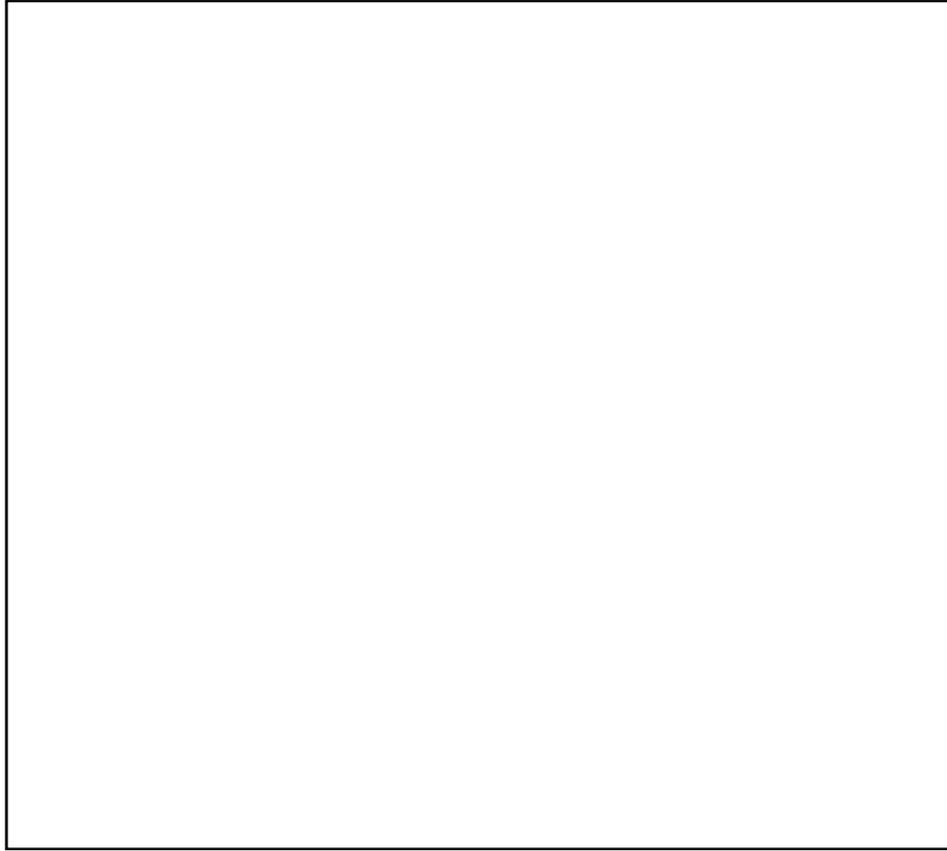
3. The calendar we use is called the Gregorian calendar, and it is based on the orbit of the earth around the _____. This makes celebrations like your birthday always fall on the same _____.

4. The Jewish people in Bible used the _____ calendar, and it's based on the phases of the moon. That's why Easter always falls on a different day each year.

1. Write your own mnemonic for the solar system. Use it to draw the solar system without looking at the book.



1. Make a drawing of what the baseball looked like in the four positions discussed in the experiment.



Fill in the following blanks with a phase of the moon:

2. When your back was to the flashlight, the part of the ball facing you looked like a _____ moon.

3. When you were facing the flashlight, the ball looked like a _____ moon.

4. When one of your sides faced your helper, the ball looked like a _____ moon.

1. An _____ is a trick your mind plays on you because of something you see.

2. Which is actually bigger: the moon **OR** a star

3. Why does the moon look bigger than the stars?

4. Why does the moon appear to be larger the closer it is to the horizon?

1. Make two drawings. One should show how a solar eclipse happens, and one should show how a lunar eclipse happens. Explain beneath each drawing.



1. A star that is very bright might appear very dim in the sky, while a dimmer star might appear brighter. Why?

2. Why does the sun appear to be larger than all the other stars, even though it is smaller than many of them?

1. Why don't we see stars during the day?

2. What is light pollution and how does it affect the way we see stars?

Lesson 58

This is a challenge lesson, so I want to challenge you to make your own notebook page for it!

Lesson 59

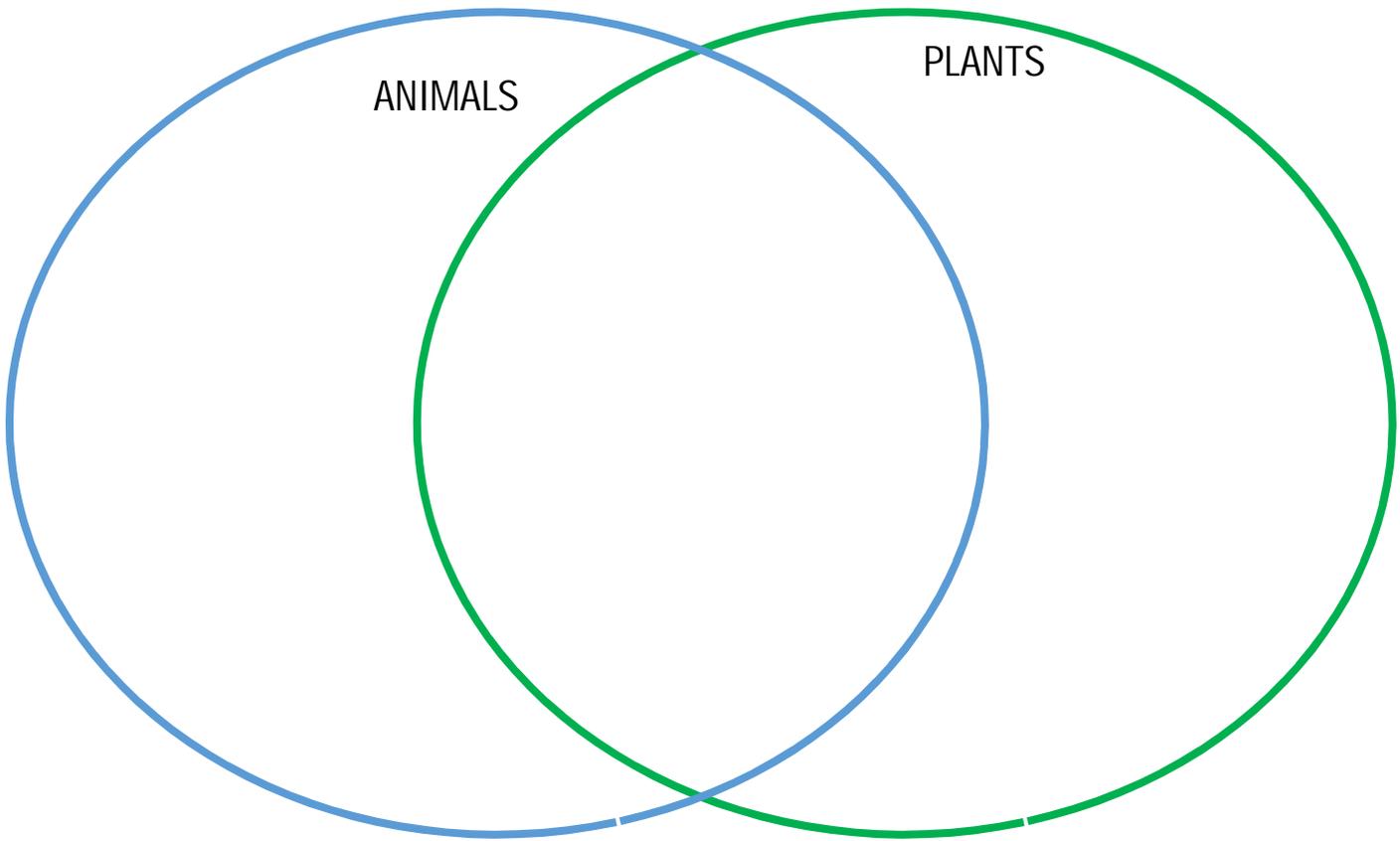
This is a challenge lesson, so I want to challenge you to make your own notebook page for it!

Lesson 60

This is a challenge lesson, so I want to challenge you to make your own notebook page for it!

Lesson 61

1. Fill out the following Venn diagram as described in the activity for this lesson



2. What is an organism?

Paste pictures of animals here:

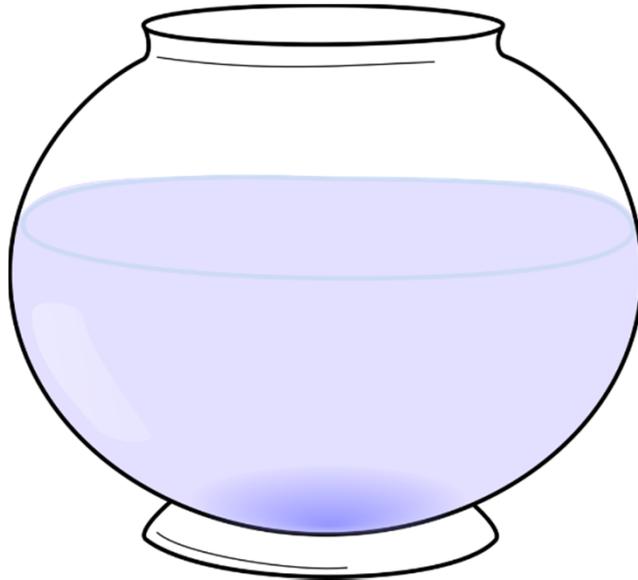
ANIMALS

Paste pictures of plants here:

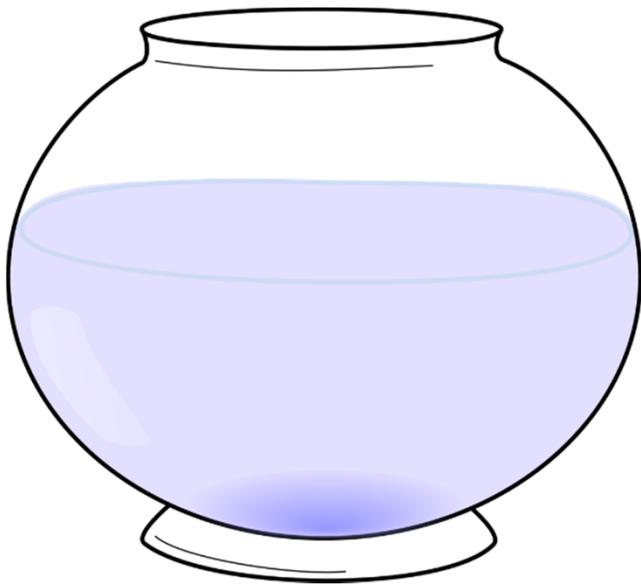
PLANTS

Lesson 62

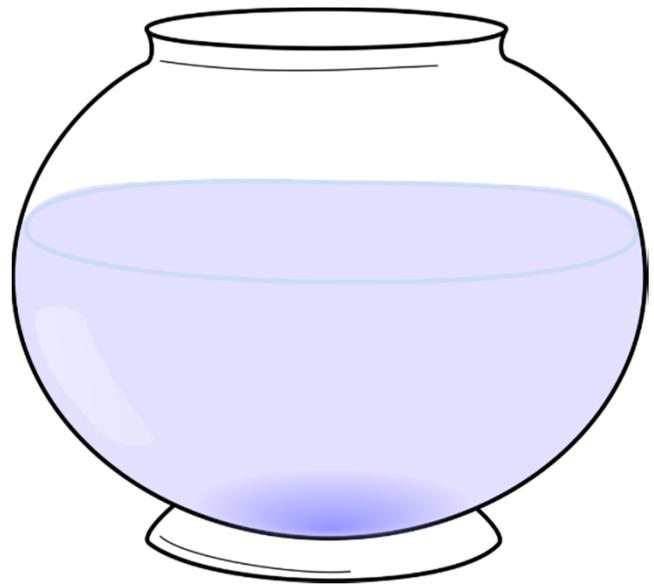
1. Draw a fish in the bowl below:



2. In bowl "A," draw what would happen with a freshwater fish that didn't urinate a lot. In "B," draw what would happen with a saltwater fish that didn't drink a lot.



A



B

3. What is the name for the process that causes this?

Lesson 63

1. Where do solutes tend to go?

toward areas that have a lot of solute and only a little solvent

OR

toward areas where there is a lot of solvent and only a little solute

2. What do we call that movement of solute described above?

3. How does a jellyfish get oxygen?

4. How does a fish get oxygen?

1. What are the two basic kinds of animals?

2. Paste pictures of each kind of animal below:

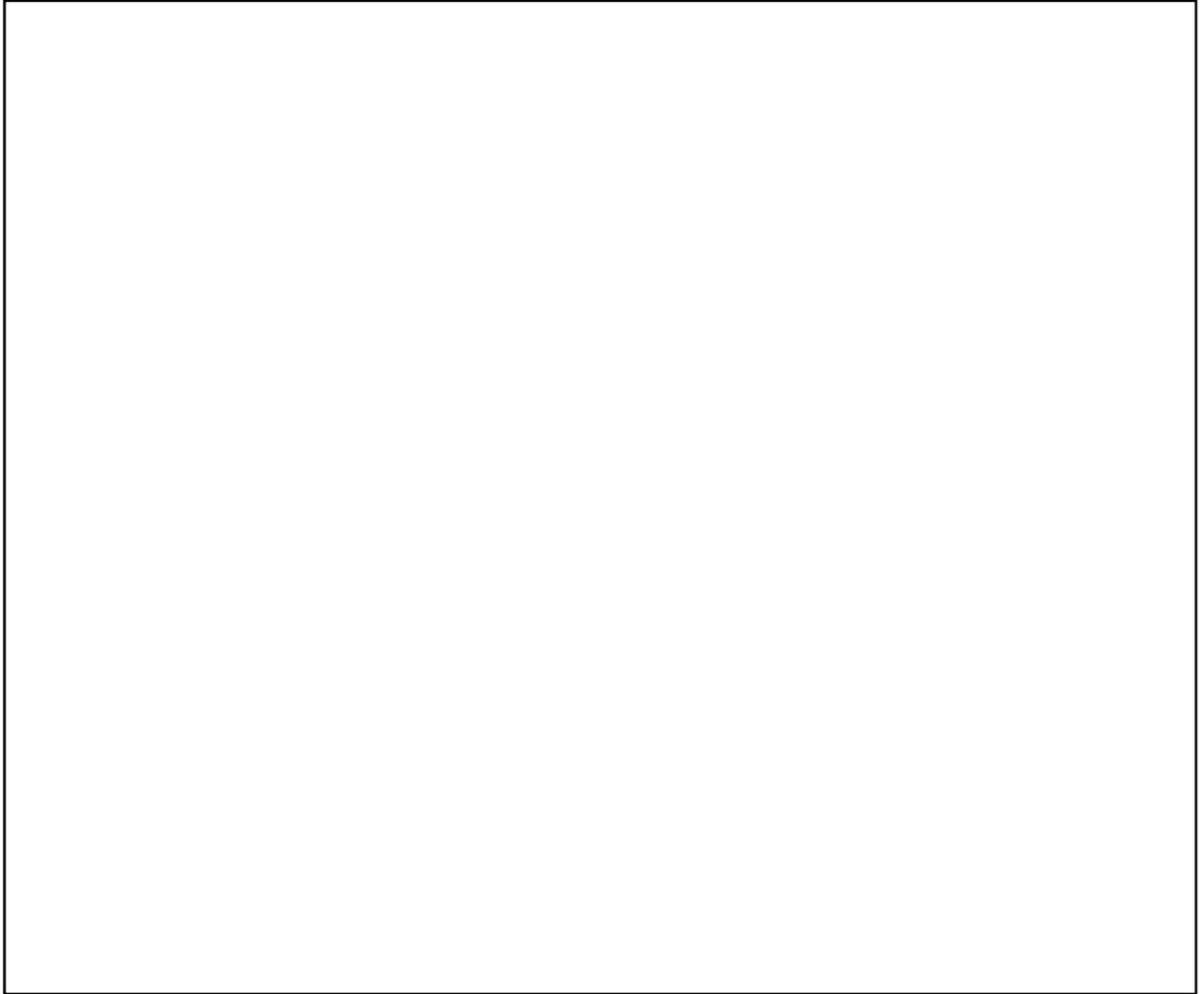
VERTEBRATES

INVERTEBRATES



Lesson 66

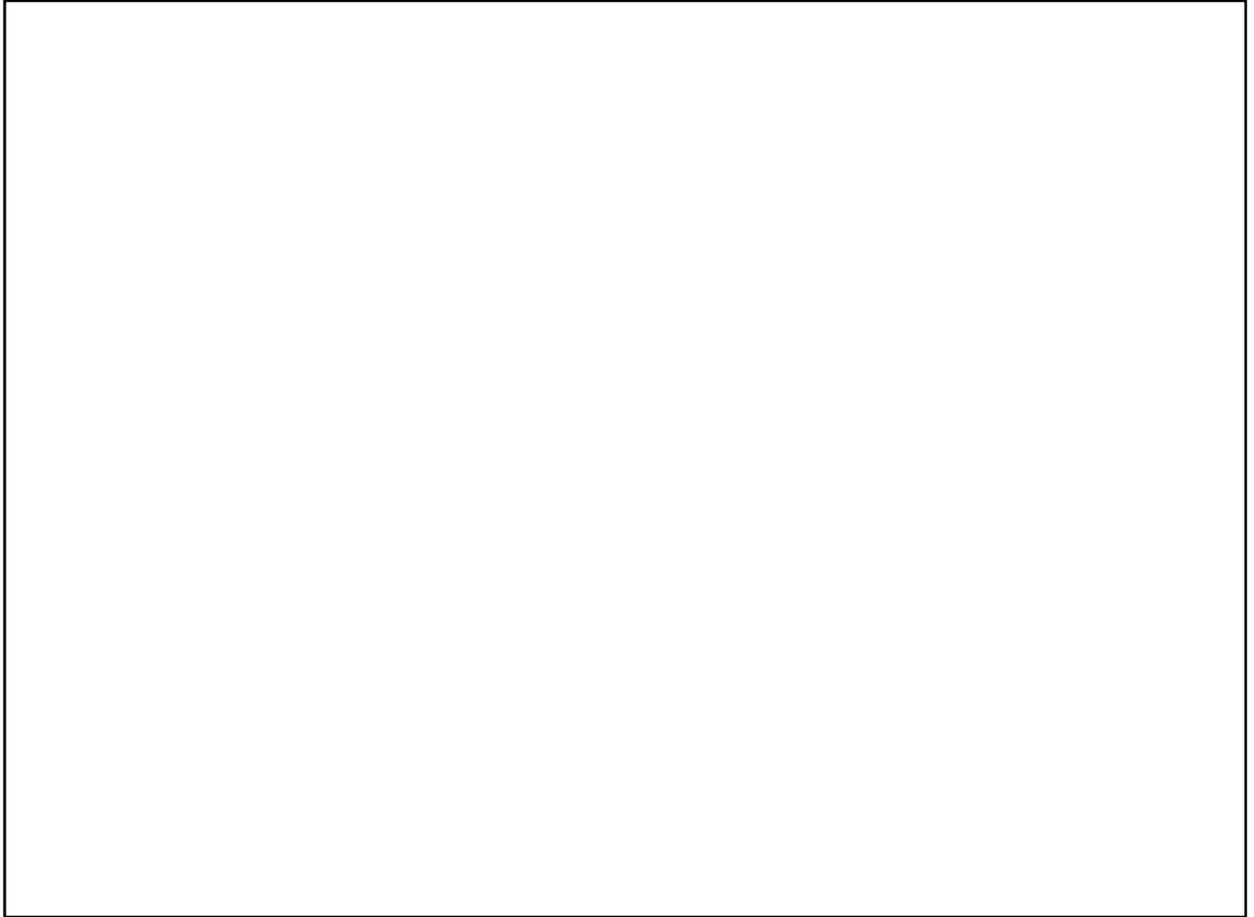
1. Draw a picture of a fish, labelling each fin and describing what it is used for.



2. Explain how a fish uses its swim bladder to control its depth.

Lesson 67

1. Draw the feather you examined and label the shaft, quill, vane, and barbs.



2. Explain how the barbs connect to each other to make the vane.

3. Why is the shaft hollow?

1. Most birds use _____ to waterproof their wings. They get it from a special gland called the _____ gland.

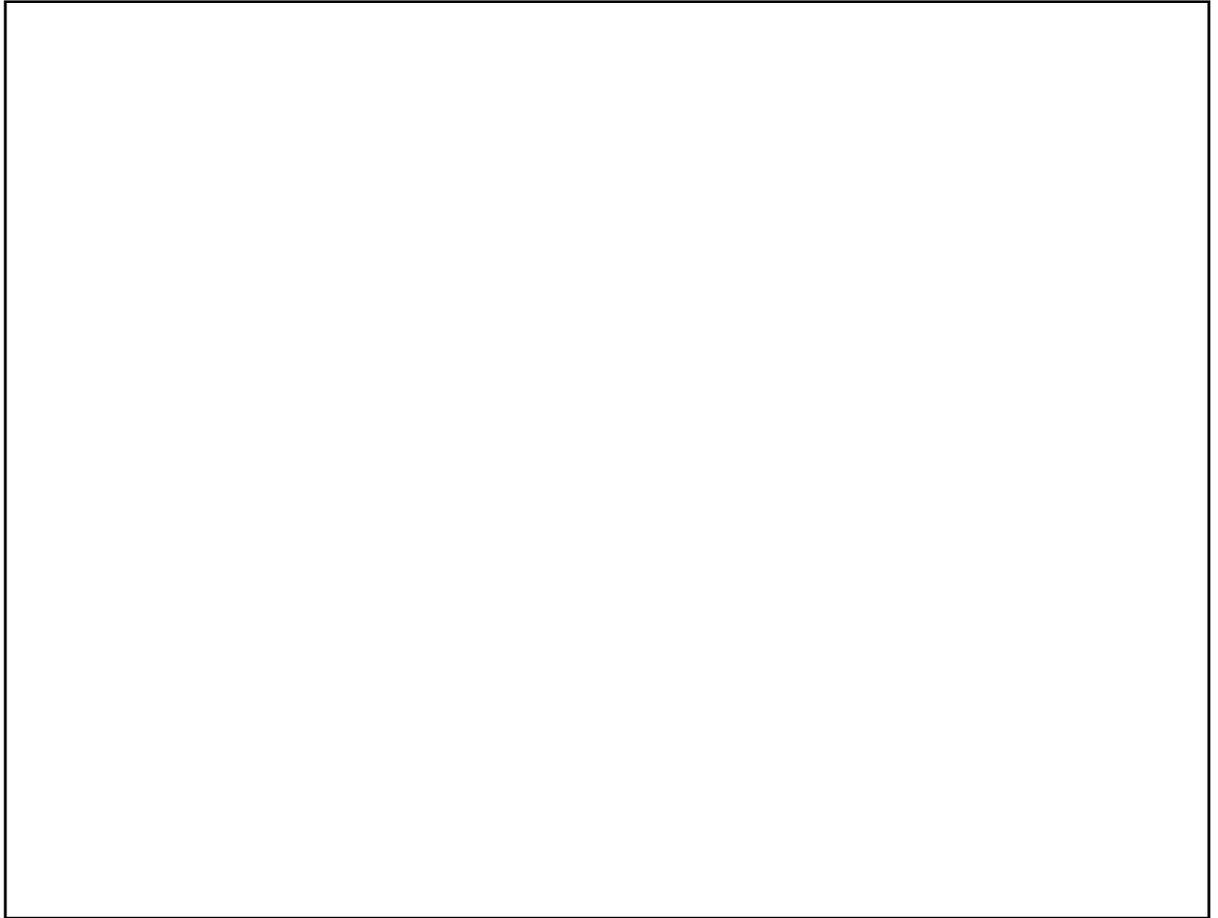
2. When a bird uses its beak to clean and smooth its feathers it is _____.

3. Why don't oil and water mix?

4. Why are waterproof feathers important for most birds, but especially for waterfowl?

Lesson 69

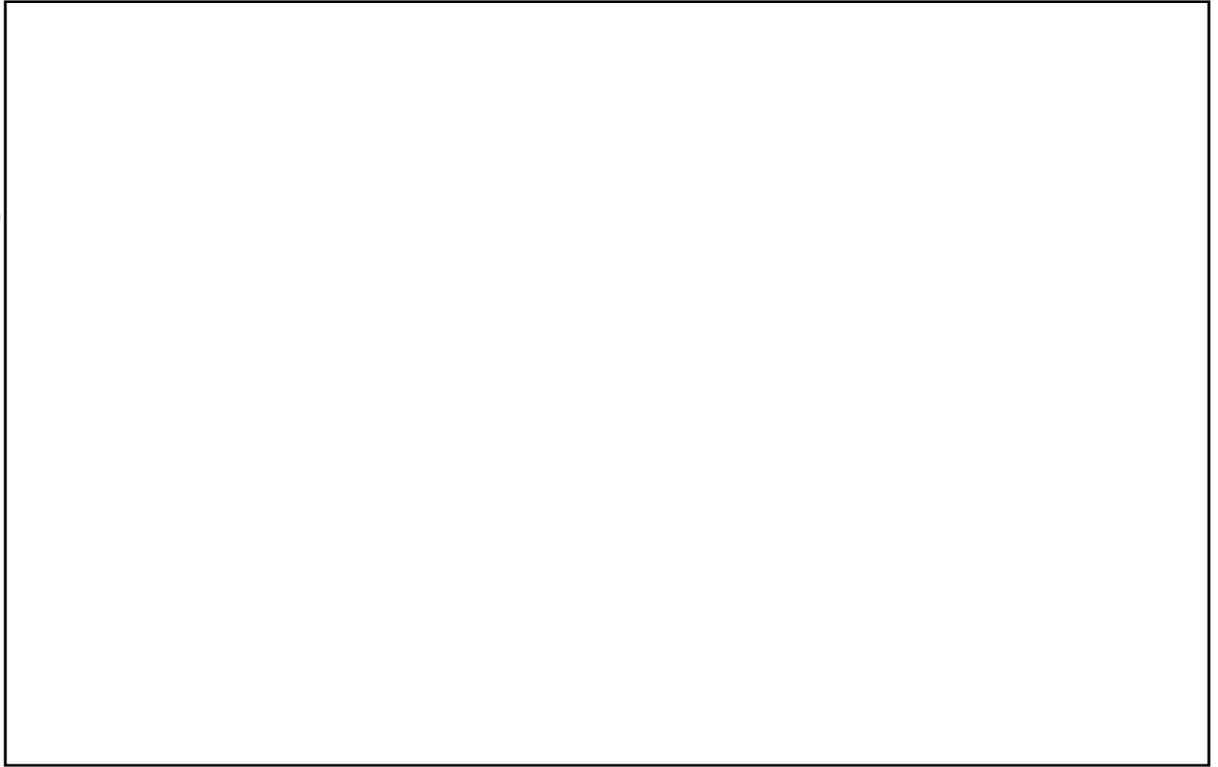
1. Make a drawing like the one on page 211, but use dots to represent air. The more dots there are, the more air pressure exists in that region.



2. Explain how this allows something with a properly-shaped wing to fly.

Lesson 70

1. Make a drawing similar to the one you made in the previous lesson, but for a bird's wing as it is flapping down.



2. How does that give the bird lift?

3. Why does a bird bring its wings closer to its body when it flaps them upwards?

Lesson 71

1. Paste a picture of an airplane below.

2. How does it compare to the Royal Tern on page 216?

3. Why are the bird and the plane so similar?

Lesson 72

1. A student is given two bones. One comes from a bird, and another comes from a cat. What should the student do to determine which came from which?

2. Why are bird bones like that?

Lesson 73

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Lesson 74

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Lesson 75

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EXAMPLES OF CATTLE

1. What do we call the kinds of animals that the Bible is probably talking about when it says “cattle”?

EXAMPLES OF CREEPING THINGS

EXAMPLES OF BEASTS OF THE EARTH

Lesson 77

1. Make a drawing of an insect. Indicate the legs and antennae.

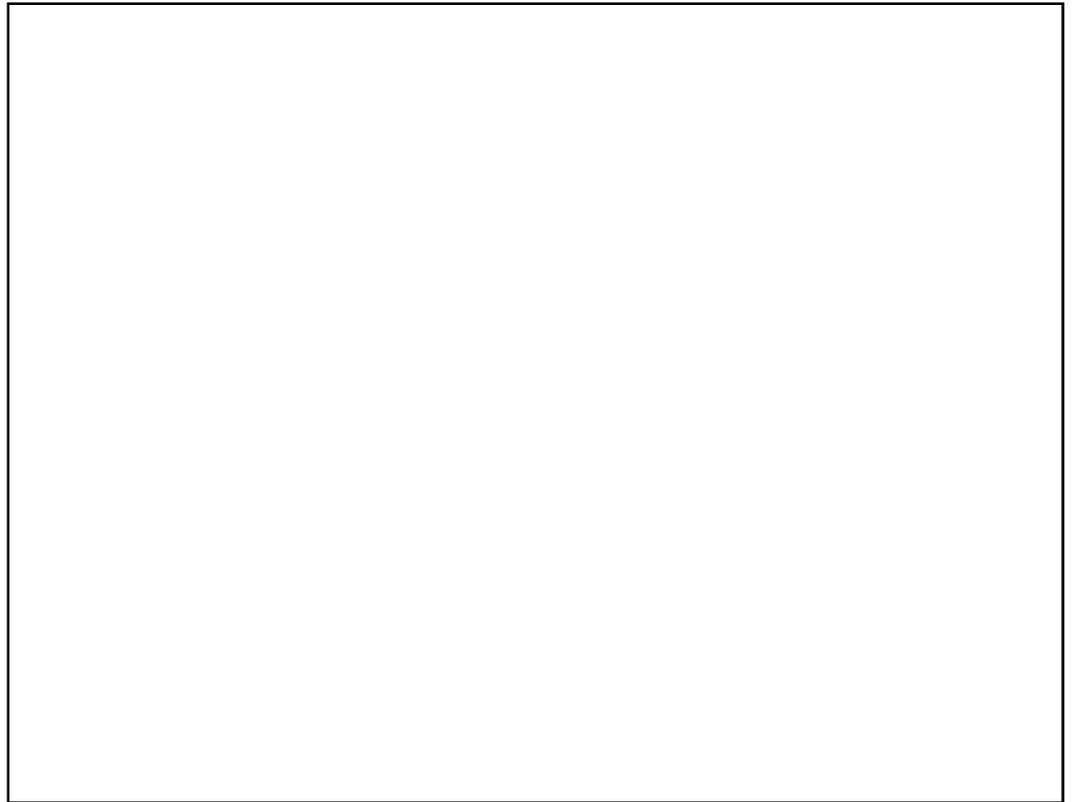
2. How many legs must an insect have?

3. Make a drawing of a spider.

4. How do you know that the spider is not an insect?

Lesson 78

1. Make a drawing of an earthworm. Point out the clitellum, the anterior end, the posterior end, the dorsal side, and the ventral side.



2. What is the earthworm's method of locomotion?

Lesson 79

Find pictures of an amphibian, a reptile, and a mammal. Paste each below, and under each picture, identify which it is, and identify what it is covered in. Also indicate whether each type of animal is warm- or cold-blooded.

Lesson 80

1. Describe your experiment. Explain why the experiment demonstrates that fat is good insulator.

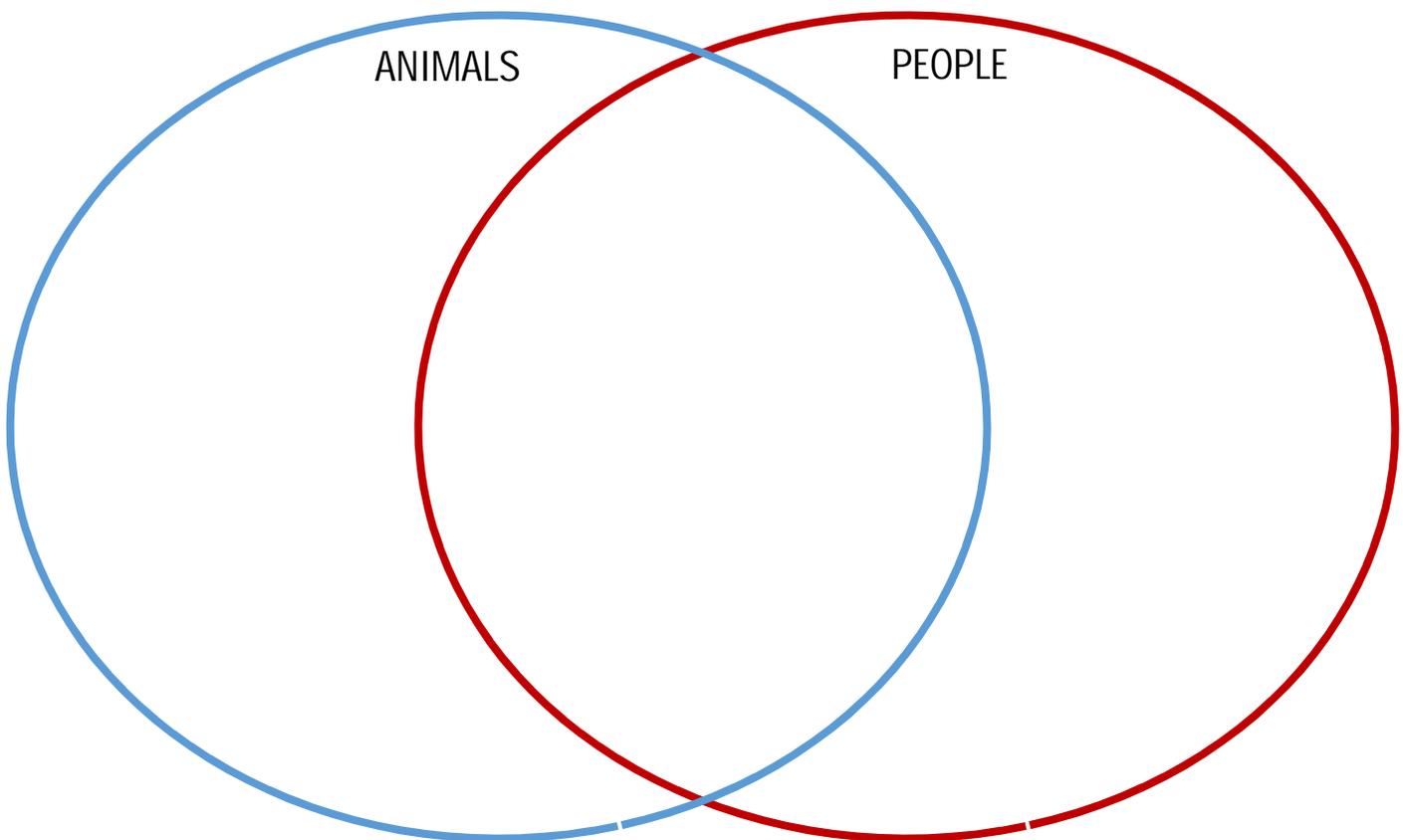
2. Explain why the fat didn't dissolve away into the water in your experiment.

3. What do animals use fat for besides insulation?

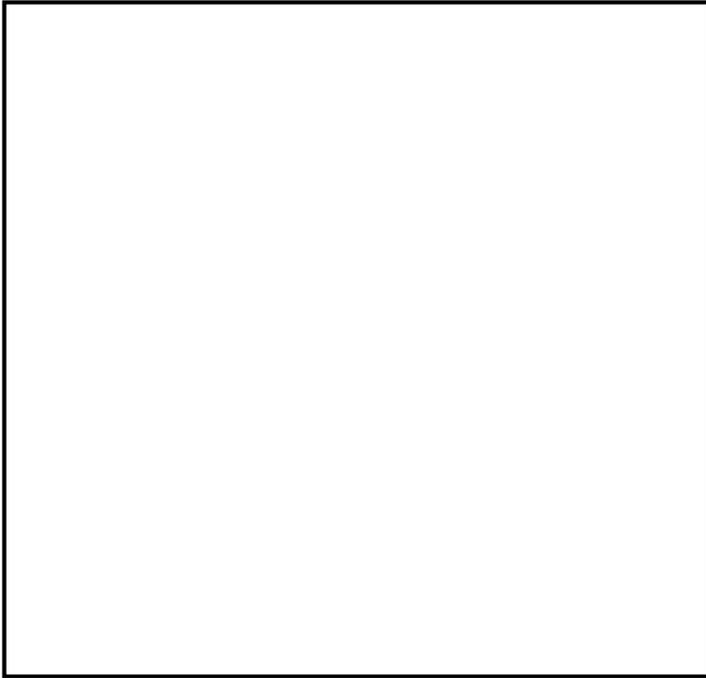
1. With what kind of animals do people have the most in common?

2. With what kind of mammals do people have the most in common?

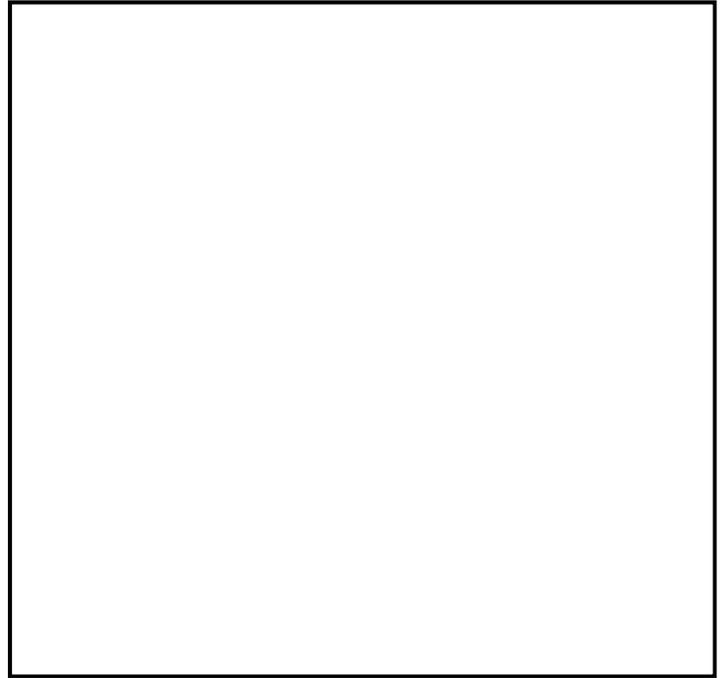
3. Fill out the following Venn Diagram:



1. In the boxes below, draw or paste pictures you find of animals that have very different eye positions (on the front of the face vs. on the side of the head). Be sure to place them appropriately.



Good Depth Perception

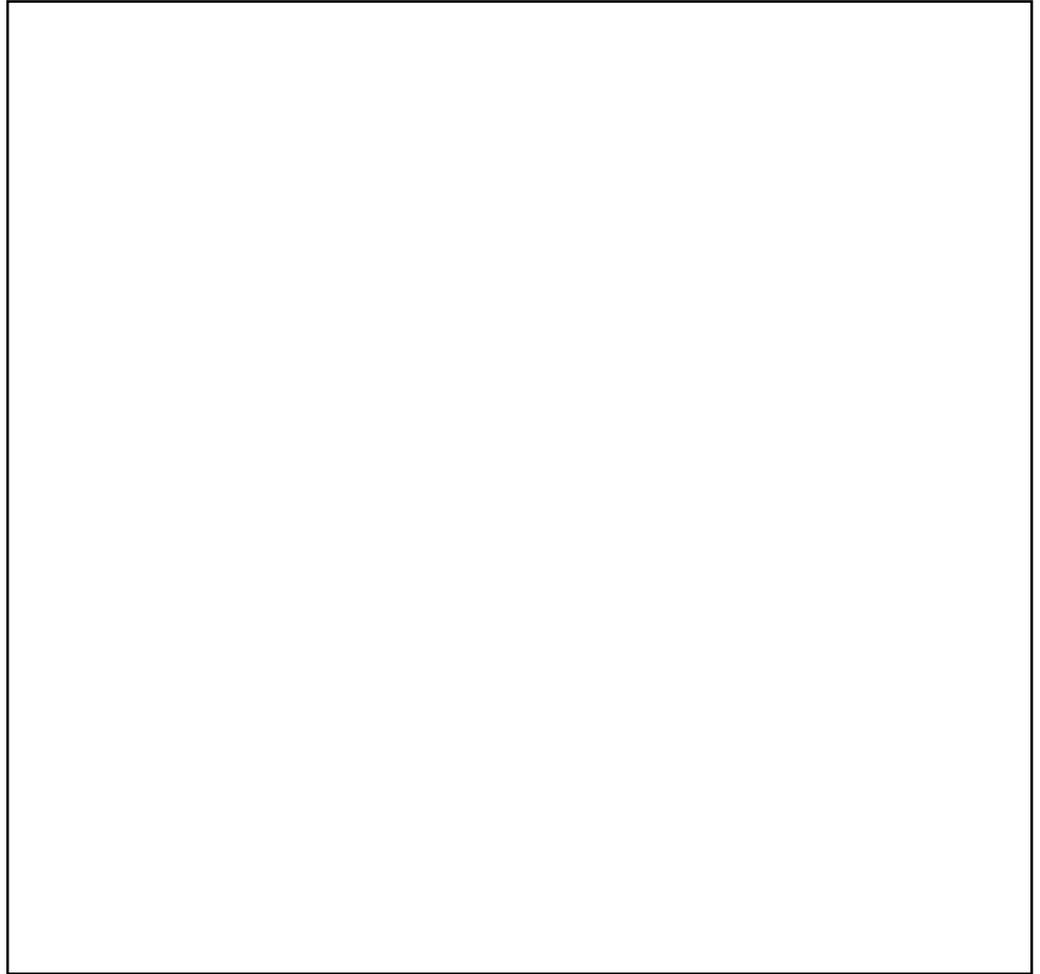


Wide Field of View

2. Explain why the animal with eyes close together on the front of the face has good depth perception and the one with eyes on the sides of its face has a wider field of view. Use the term “binocular vision” in your answer.

Lesson 83

1. Draw a picture like the one on page 253. You don't have to have all the detail of the inside of the nose. Just draw the person, what he or she is smelling, and chemicals in the air going into the nose. Also, point out the nare through which the air is entering.

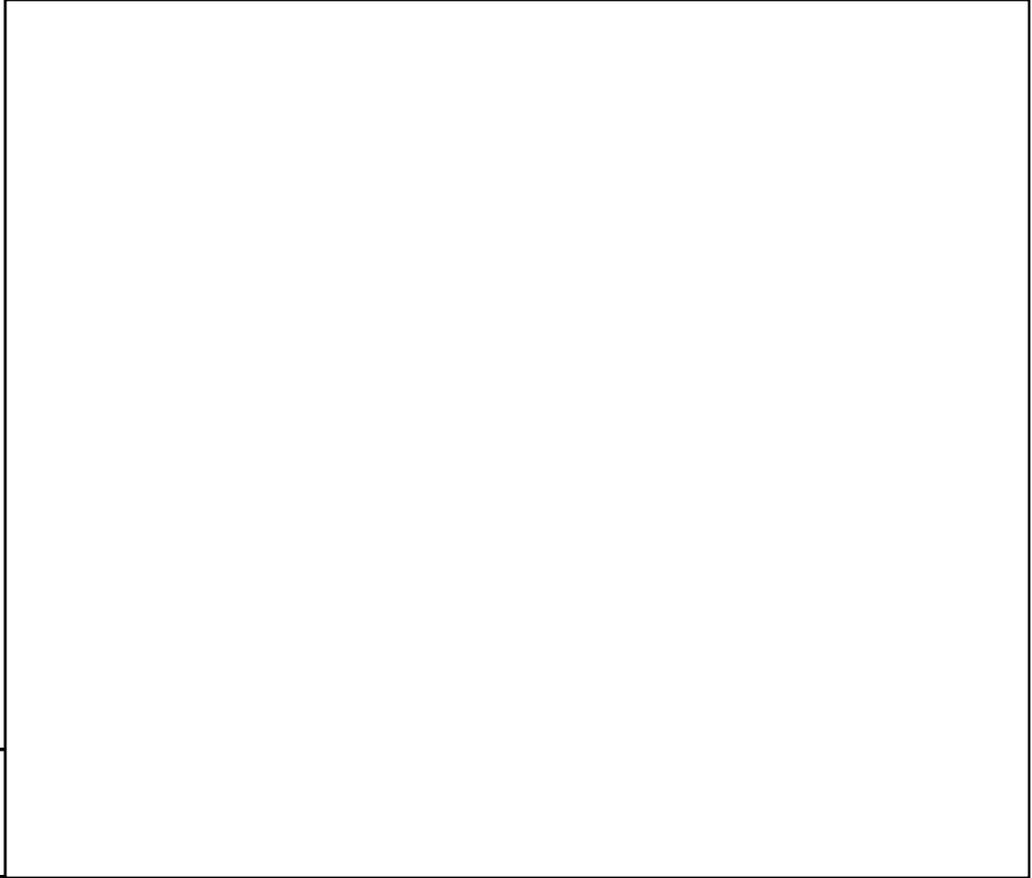


2. Explain how this makes a sense of smell.

Lesson 84

1. Draw a picture like the one on page 256. You don't have to have all the that is in the drawing. Just draw the things that are labeled in black.

2. Explain how this allows you to hear.



1. Write an explanation in your own words for how your static sense of balance works. Use the terms “vestibule” and “otoliths” in your explanation.

2. Write an explanation for how your dynamic sense of balance works. Use the terms “cupula” and “semicircular canals” in your explanation.

1. What do we call the things that give you your sense of taste?

2. Name the five tastes.

3. How can you taste all the wonderful flavors that you experience?

Lesson 88

This is a challenge lesson, so I want to challenge you to make your own notebook page for it!

Lesson 89

This is a challenge lesson, so I want to challenge you to make your own notebook page for it!

Lesson 90

This is a challenge lesson, so I want to challenge you to make your own notebook page for it!