Science in the Beginning

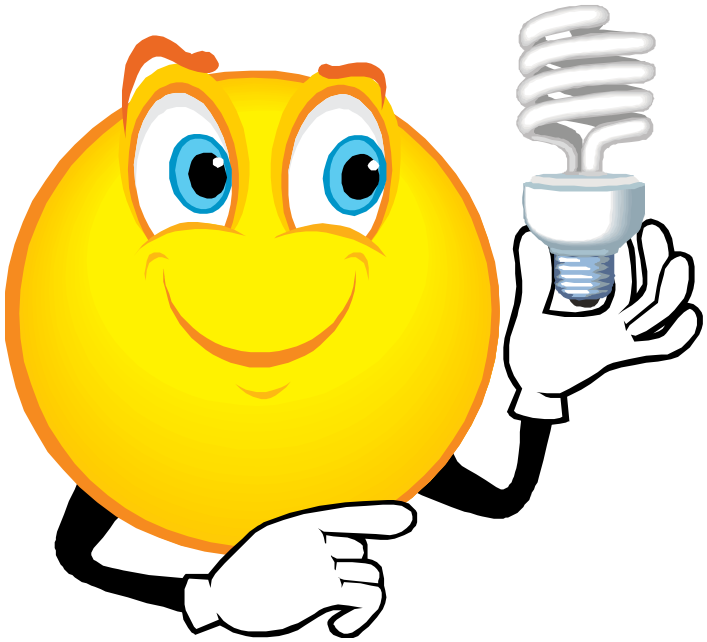
Notebook

This notebook belongs to

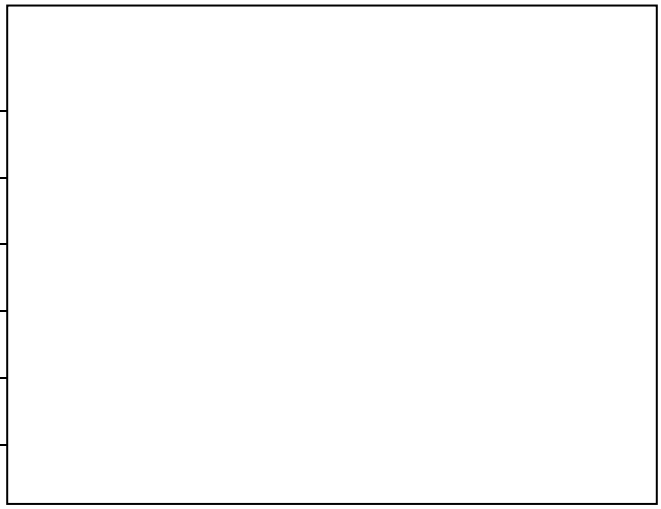
_____

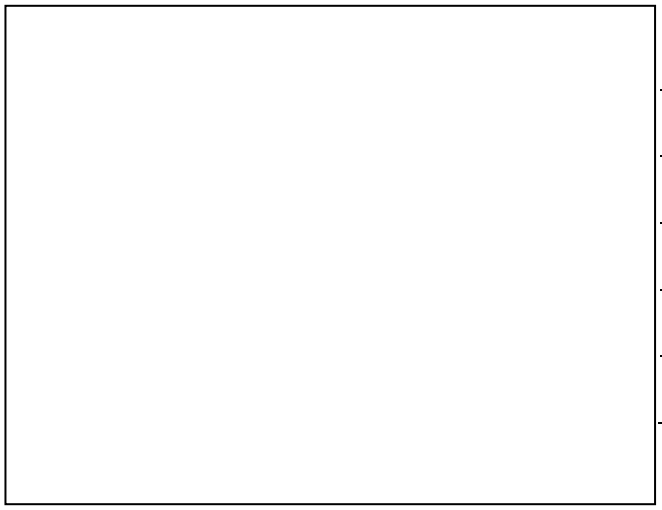
Day 1:

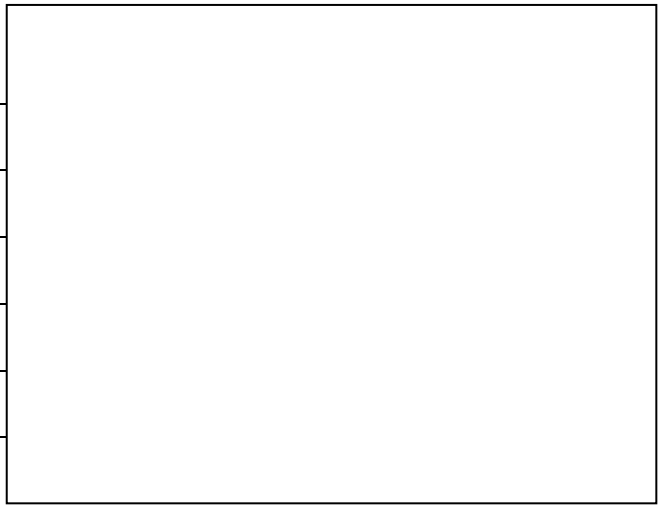
Let there be Light!



Day 1: Lesson 1 "Light"







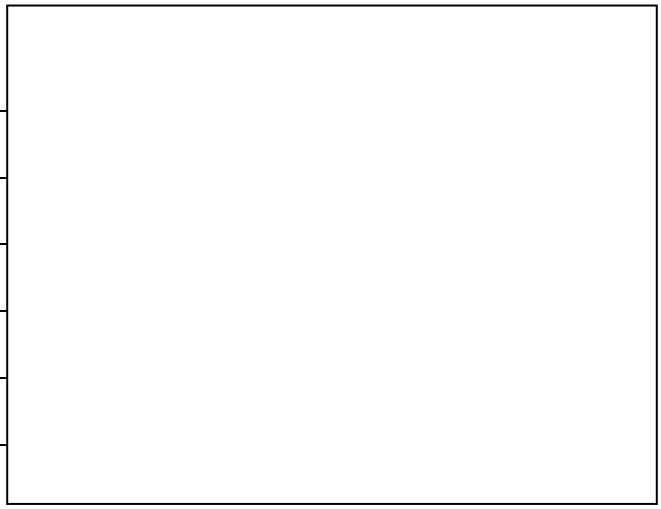
Day 1: Lesson 1

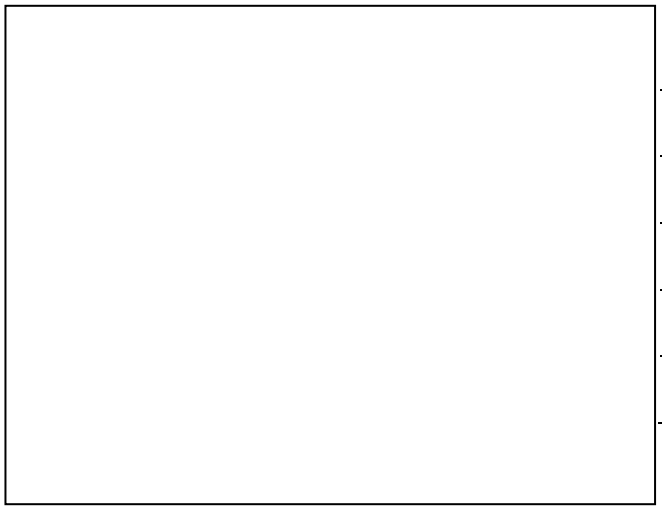
"Light"

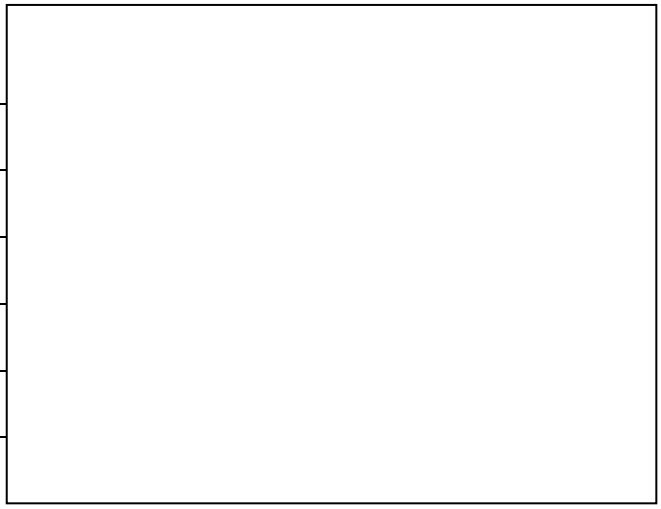
Draw a picture that comes to mind when you think of light.

What does it mean for light to reflect off something?

Day 1: Lesson 2 "The Colors in Creation"







Day 1: Lesson 2

"The Colors in Creation"

Draw a rainbow with the colors in the proper place.

Write Mr. White Light's name and explain why it tells you the order of the basic colors in a rainbow.

Day 1: Lesson 3

"Absorbing and Reflecting"

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.

Day 1: Lesson 3 - Continued

"Absorbing and Reflecting"

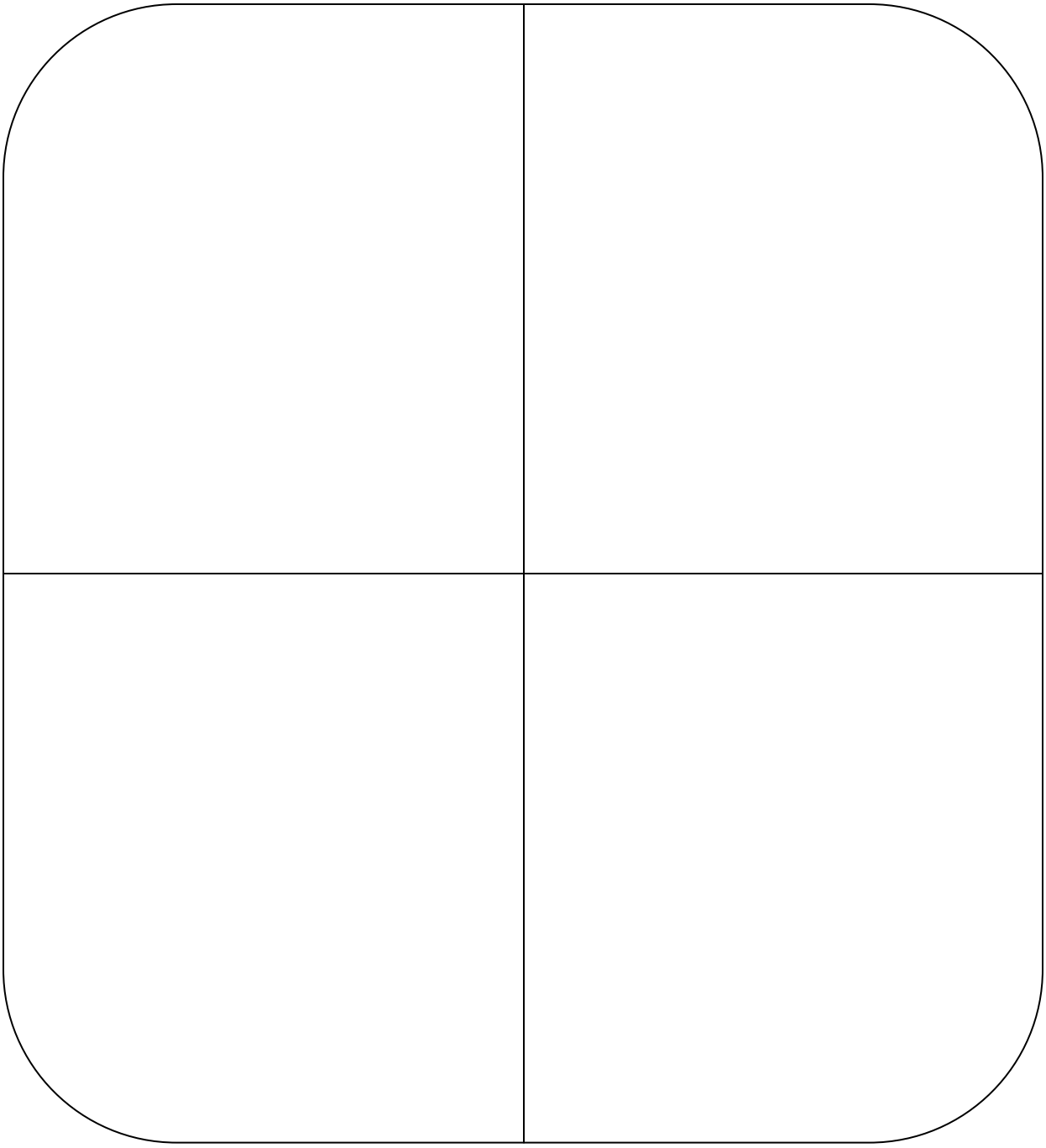
Explain what the seven arrows represent and what the red arrow hitting the person's eye represents.

Day 1: Lesson 4 "Light and Energy"

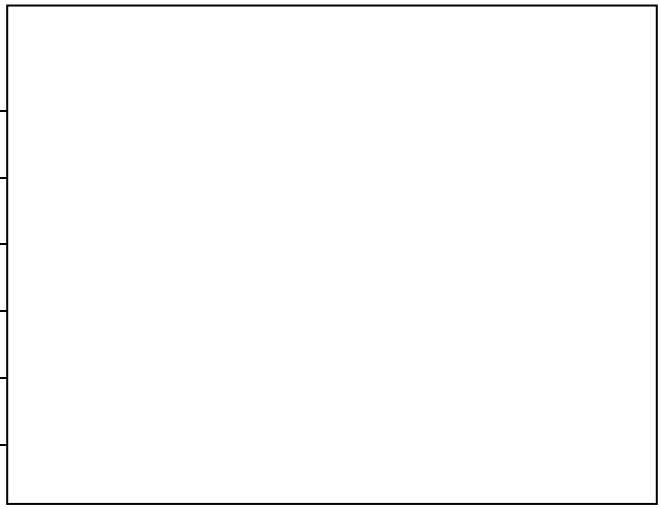
Day 1: Lesson 4

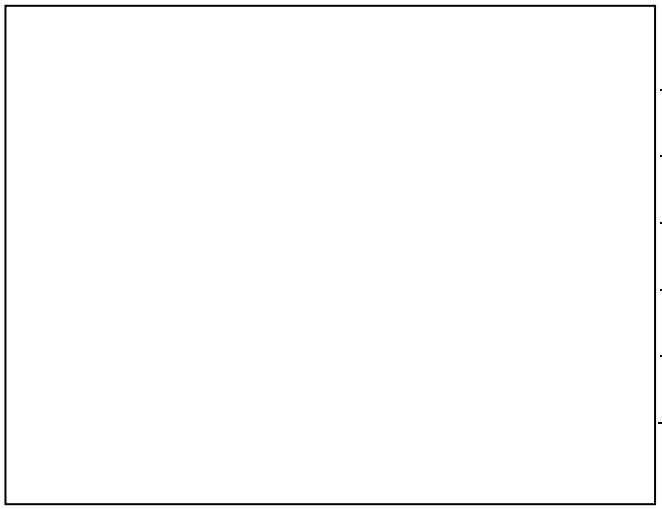
"Light and Energy"

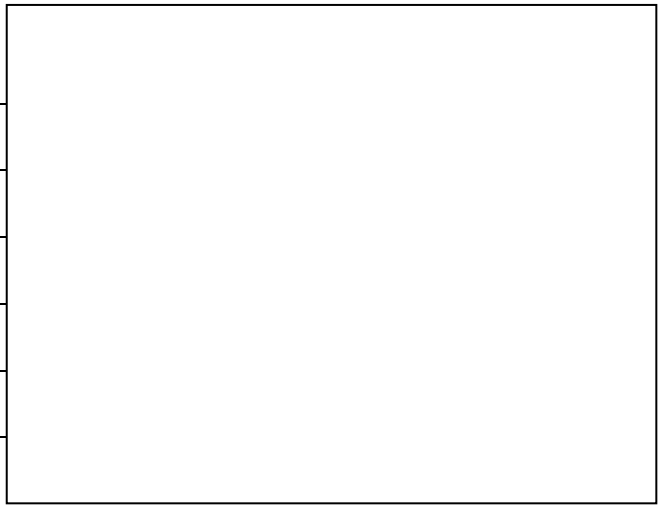
Find pictures (or draw pictures) of the four types of energy you learned about in this lesson. Label the form of energy the picture represents.



Day 1: Lesson 5 "Learning More About Light That Is Reflected and Absorbed"





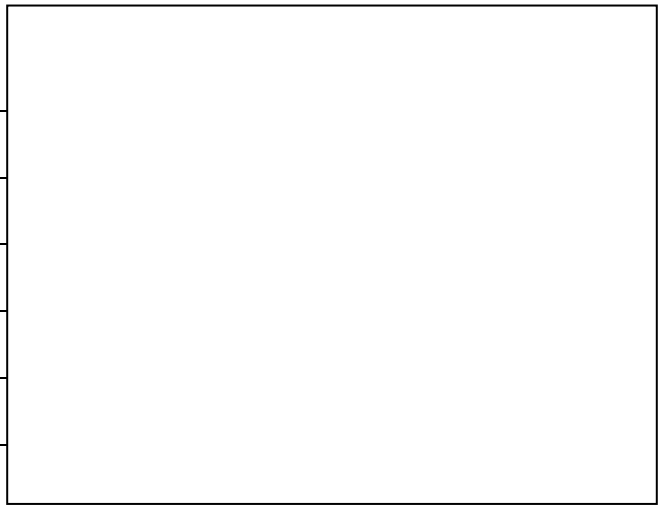


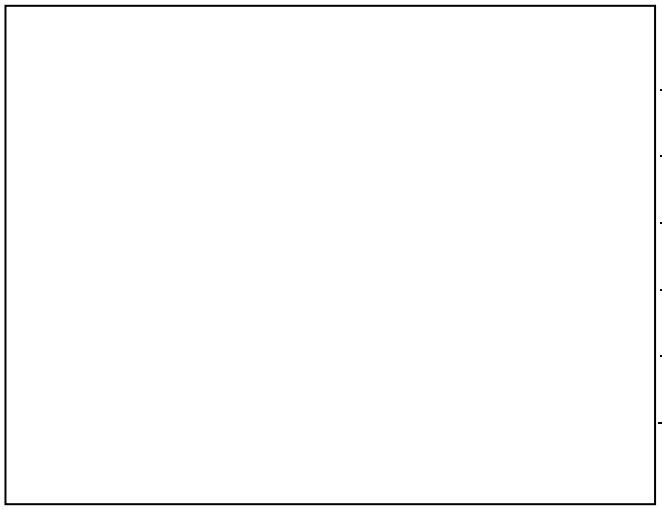
Day 1: Lesson 5

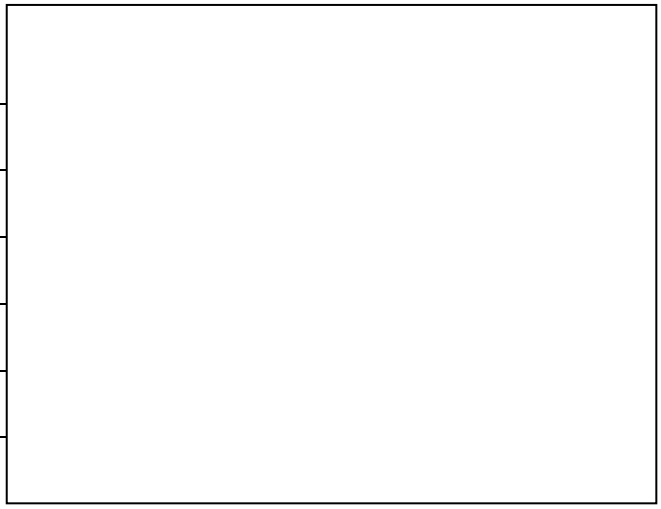
"Learning More About Light That Is Reflected and Absorbed"

Write an explanation of the experiment you did. Be sure to explain what the magnifying glass did as well as why the paper got hot, even though it was white. Also, explain what main difference you would see if you used black paper in the experiment instead of white paper, and explain why you would see that difference.

Day 1: Lesson 6 "Energy Conversion in Creation"







Day 1: Lesson 6

"Energy Conversion in Creation"

Write down the Law of Energy Conservation. Use it to explain what happened in the experiment.

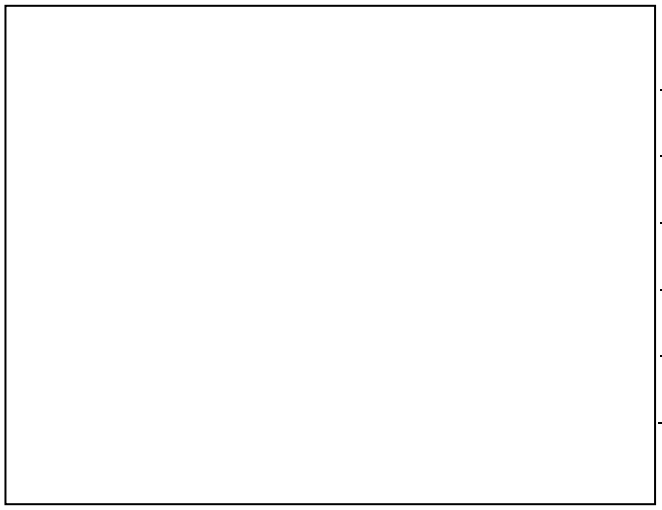
Day 1: Lesson 7"More on the Law of Energy Conversion in Creation"

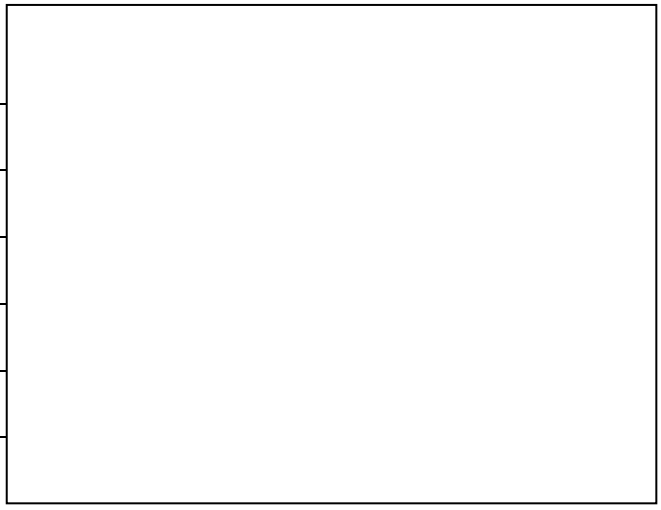
Day 1: Lesson 7

"More on the Law of Energy Conversion in Creation"

Suppose you have a brand new toy car. The car requires three batteries in order to run. You put in three new batteries and play with the car for a while. List what energy conversions take place in order for the toy car to move.

Day 1: Lesson 8 "The Light You Don't See"





Day 1: Lesson 8

"The Light You Don't See"

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.

Write what you think would happen if you pointed the remote right at the television, but someone stood in between the remote and the television. Would the remote turn on the television? Why or why not? Try it and see if you are right.

Day 1: Lesson 9 "How the Human Eye Sees"

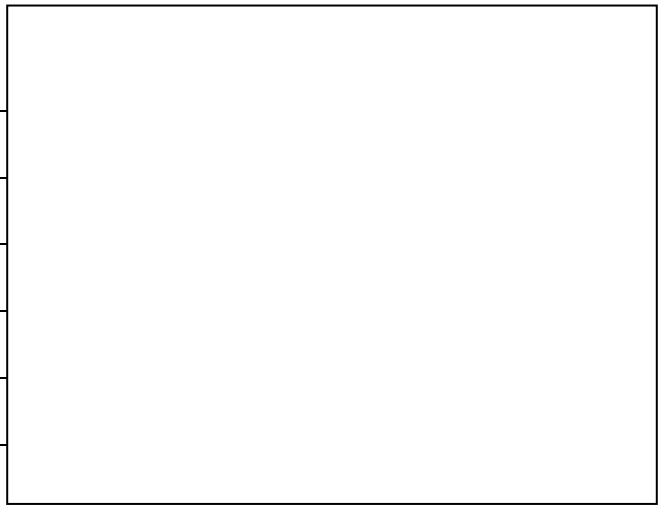
Day 1: Lesson 9

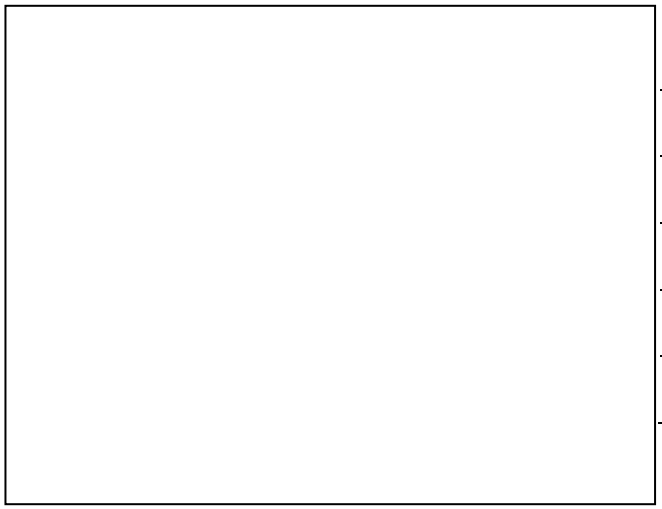
"How the Human Eye Sees"

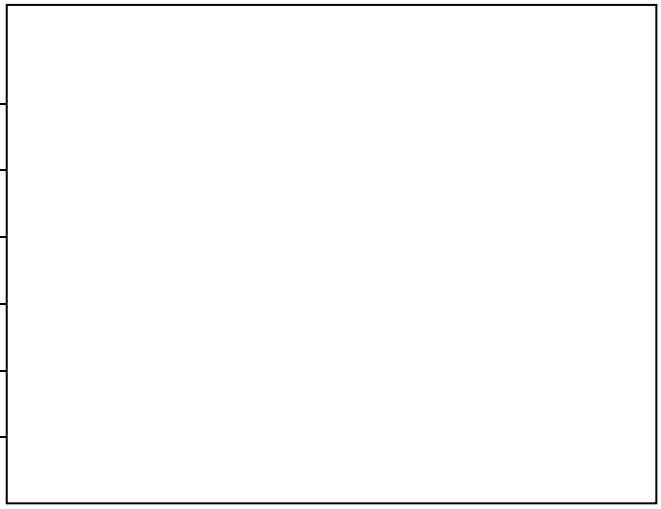
Make your own drawing of the eye, based on the one you see on page 25. Label the cornea, lens, retina, and optic nerve. Note that the rods and cones can be found on the retina. Point out where the blind spot is.

Explain why the blind spot is a blind spot.

Day 1: Lesson 10 "Reflection, Absorption, and What Else"





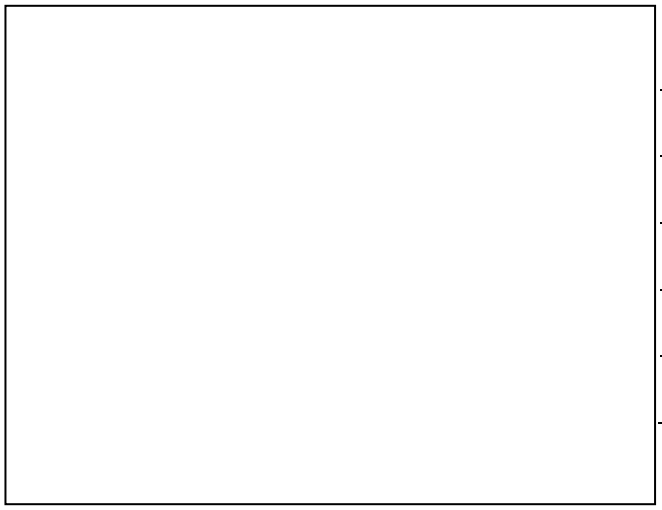


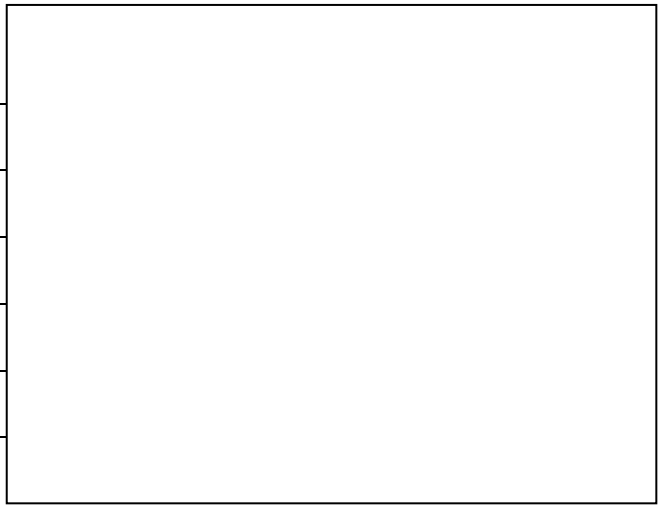
Day 1: Lesson 10

"Reflection, Absorption, and What Else"

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 bow. Use arrows to represent light, showing what the light had to do for you to see the fork. Then make a drawing of what happened when you looked at the surface of the water from below. Once again, use arrows to show what light had to do in order for you to see the fork like that.

Day 1: Lesson 11 "How the Amount of Light Affects What You See"



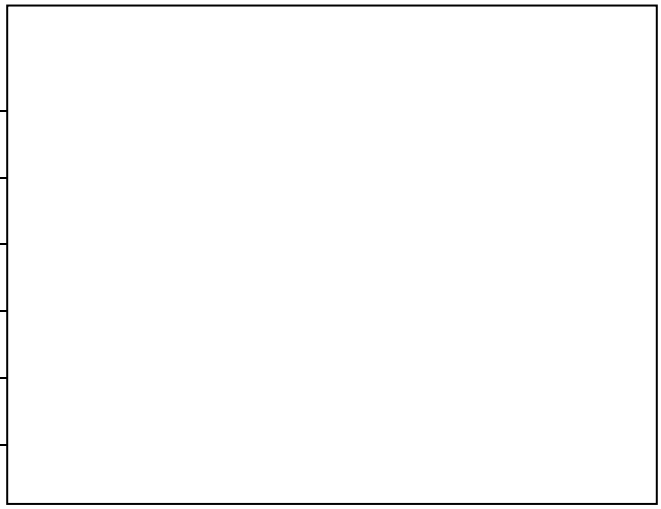


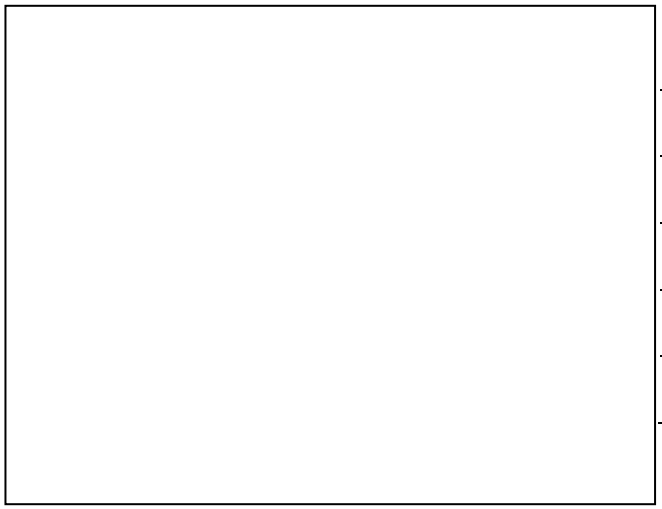
Day 1: Lesson 11

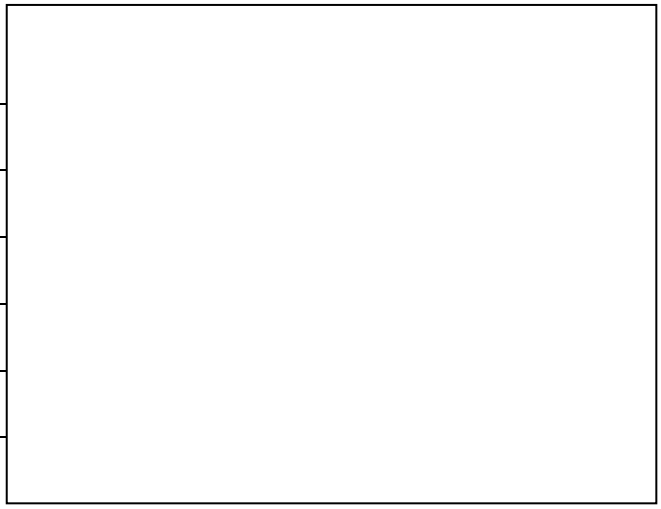
"How the Amount of Light Affects What You See"

Suppose a friend is staying with you, and he wants to scare your sister. He says that he will wait until night and then he will go stand outside her bedroom window, and shine a light on his face. Your sister will think he is a ghost and will get really scared. Being the nice brother that you are, you don't want this to happen, so you tell your sister to keep her lights on when she is in her bedroom at night. Explain why this will keep your sister from seeing your friend's face in the window.

Day 1: Lesson 12 "Guiding Light"





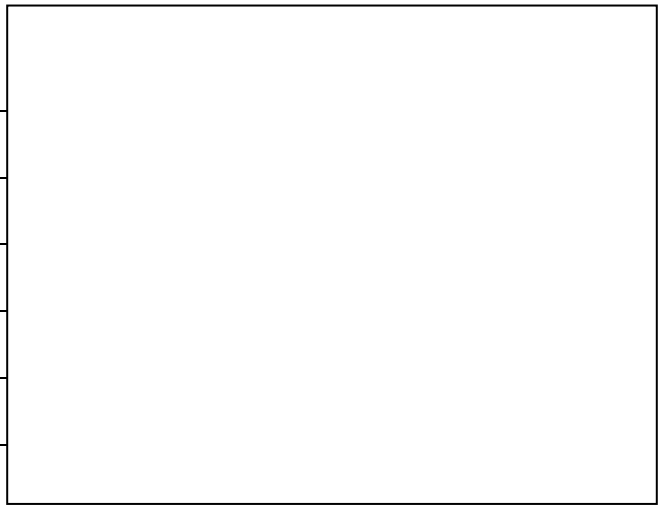


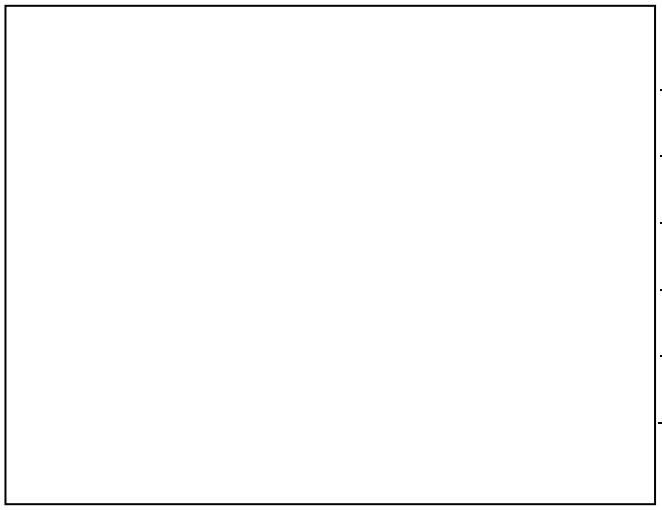
Day 1: Lesson 12

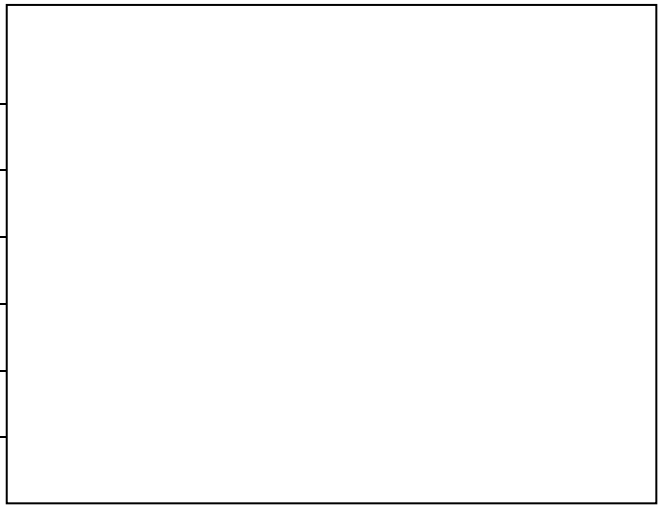
"Guiding Light"

Draw a side view of the experiment you performed. Include the flashlight, bottle, and the stream of water coming out of the bottle. Draw arrows showing the light reflecting through the stream.

Day 1: Lesson 13 "Light Can Carry Information"







Day 1: Lesson 13

"Light Can Carry Information"

1. Morse code converts every letter in the English Language into _____ and _____.

2. Explain why both you and your helper needed the Morse code chart in order for you to send a message to your helper with the flashlight.

Day 1: Lesson 14

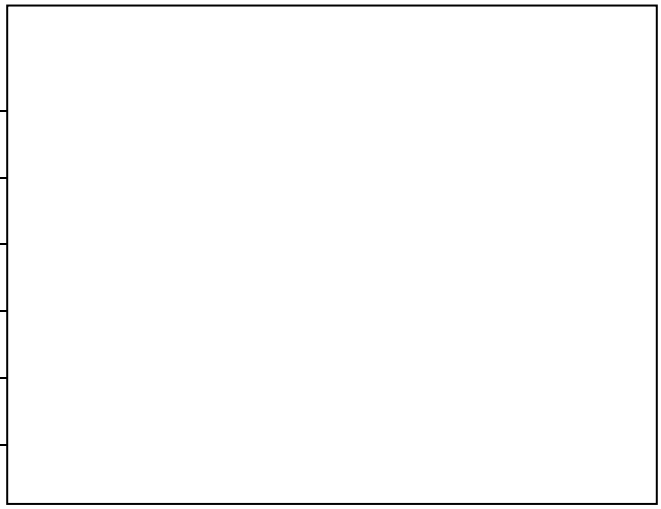
"Refraction"

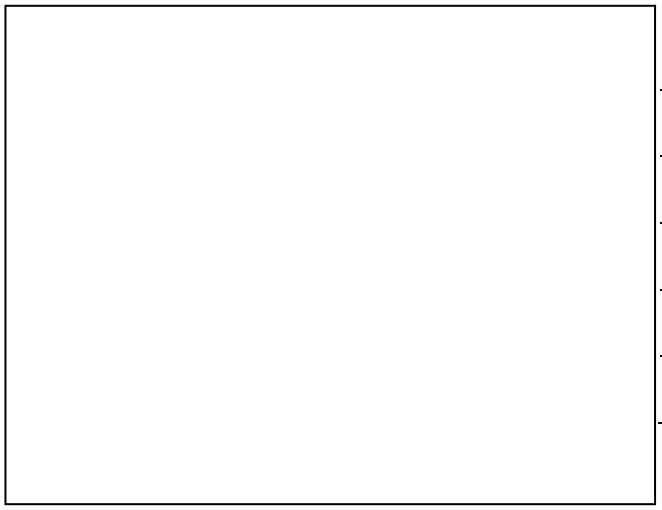
Draw what you saw in the first experiment. Make one drawing with the flashlight tilted at an angle so that the beam that went under the cake pan was different from the beam that was in the water. Label the beam below the pan as "beam in air," and label the beam in the water as "refracted beam in water." Then make a second drawing with the flashlight pointed straight at the cake pan so it is not possible to tell the two beams apart.

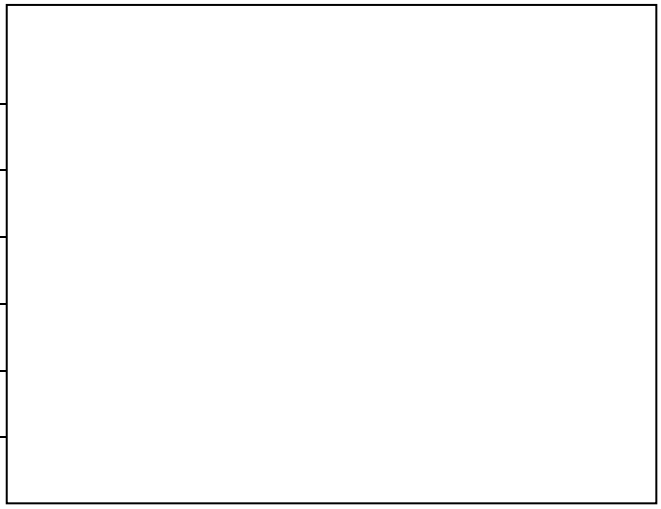
Day 1: Lesson 14 - continued

Explain refraction in your own words.

Day 1: Lesson 15 "Refraction and Magnification"







Day 1: Lesson 15

"Refraction and Magnification"

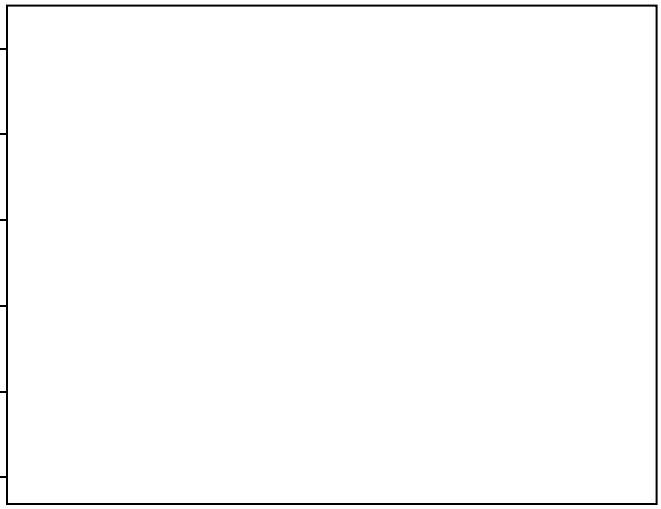
1. A magnifying glass is made from a _____ piece of glass.

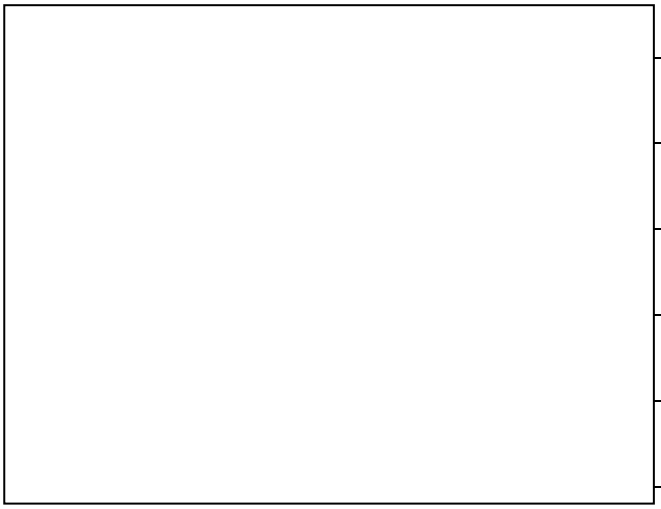
2. Why does the lens in your eye change shape?

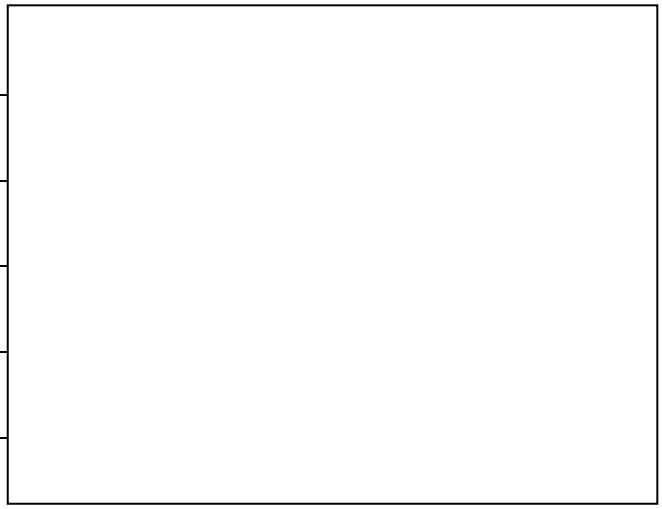
3. Explain in your own words why the puddle of water in your experiment acted as a magnifying glass.

Day 2: Water and Air

Day 2: Lesson 16 "Water and the Expanse"







Day 2: Lesson 16

"Water and the Expanse"

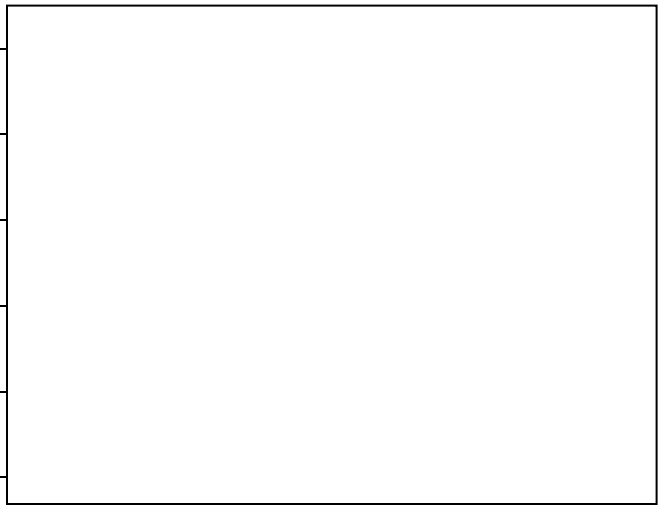
Ice is water in its _____ phase.

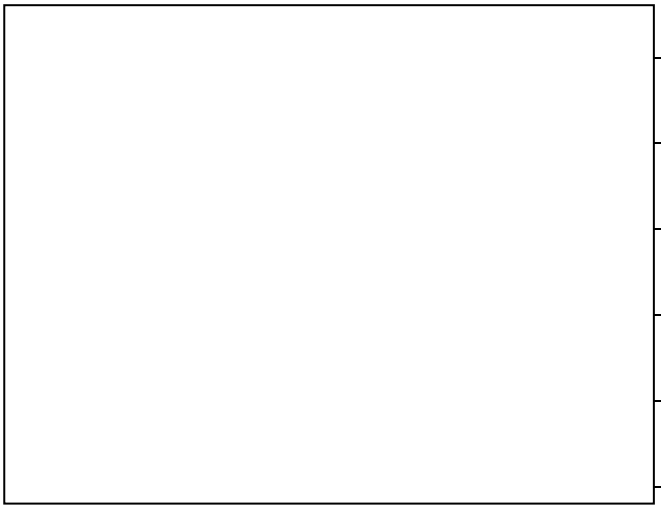
The water that you drink is in its _____ phase, and

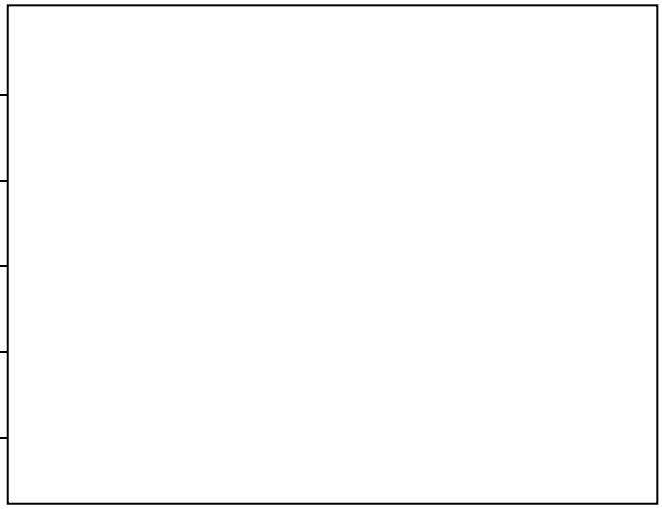
when water evaporates, it turns into its _____ phase.

What is a cloud made of? Explain how a cloud forms. Be sure to include words such as "evaporation," "condensation," and "water vapor" in your explanation.

Day 2: Lesson17 "Solids and Liquids"





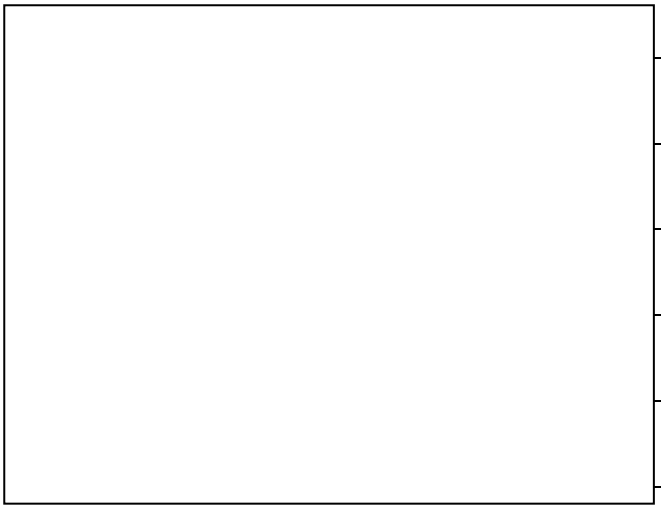


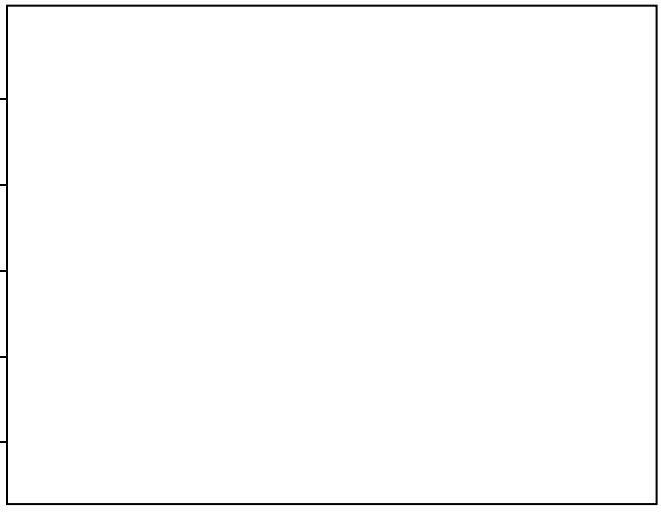
Day 2: Lesson17
"Solids and Liquids"

Water	**Wax**
Water in its *liquid phase*	Wax in its *liquid phase*
Water in its **solid phase**	Wax in its **solid phase**

Explain the difference in sizes of the squares above and how they represent what happens when water and wax freeze.

Day 2: Lesson 18
"Why Things Float"

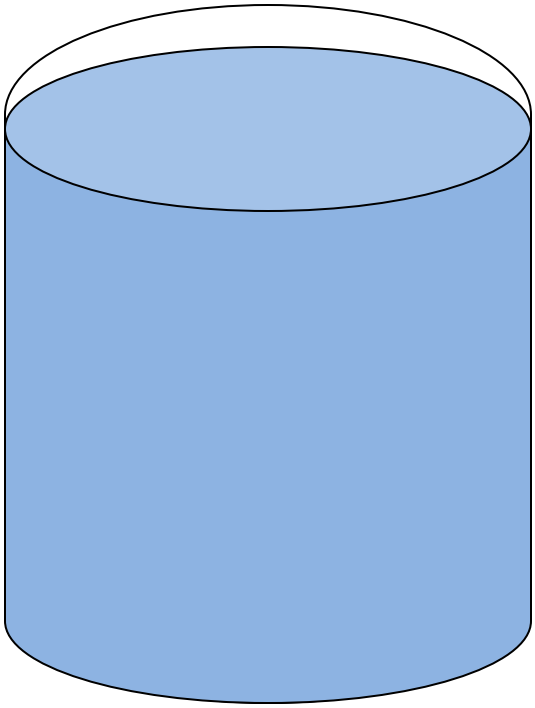




Day 2: Lesson 18
"Why Things Float"

1. Fill in the blank with several words: In order to sink, an object must weigh more than _____.

2. Draw 2 squares in the glass of water below. One square should be at the bottom of the container, while the other square should be floating in the water. Assume both squares weight the same, which means that they have to be 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.



Write an explanation why you drew the sizes the way you did.

_____

_____

_____

_____

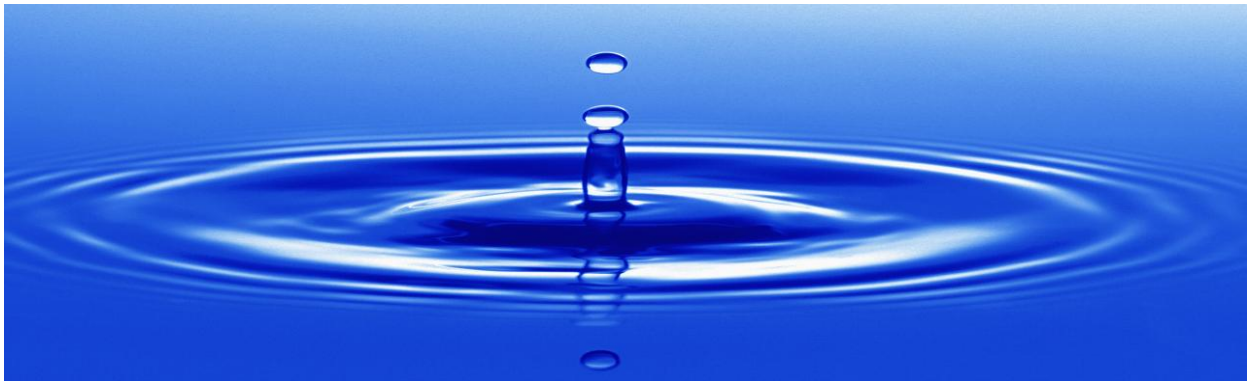
_____

Day 2: Lesson 19
"Will It Float"

Record the results of your experiment in the chart below.

Hypothesis: Do you think the items will sink or float?

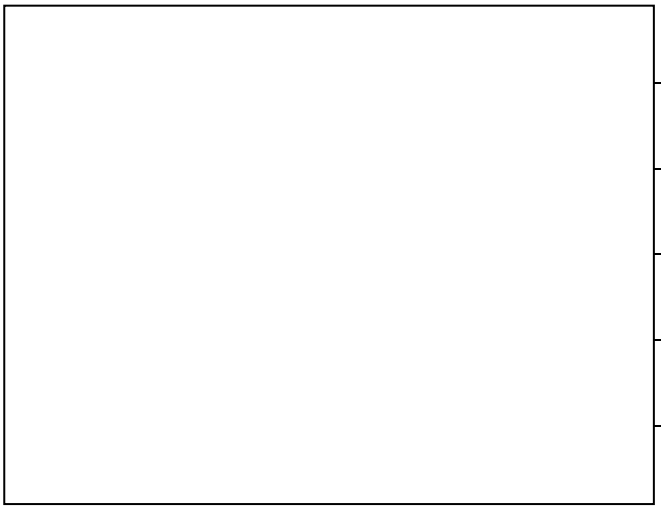
Item	Prediction (sink or float)	Results (sink or float)
Can of Coke		
Can of Diet Coke		
Candle		
Metal Paper Clip		
Ice Cube		
Onion		
Fresh Orange		
Potato		

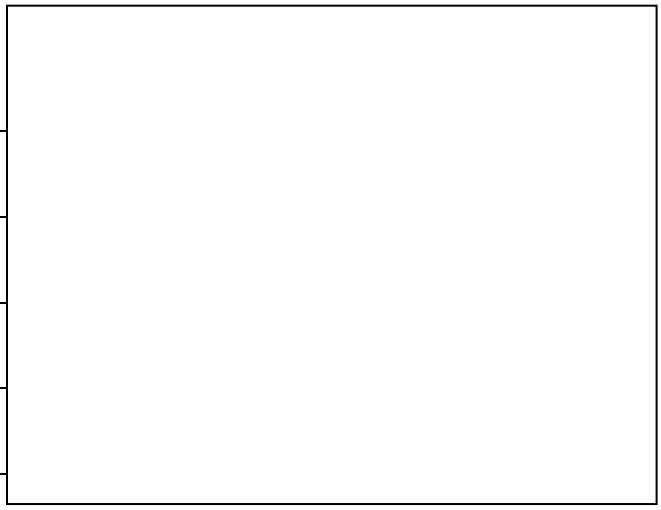


"A Fish Story"

Create a story about a poor fish that lives in a lake in an imaginary world where water contracts when it freezes like most other things in the world. In this imaginary world, usually the winters are mild, and while the temperatures are sometimes cold enough to freeze some of the water in the lake, they don't last long enough to freeze much of the water. However, one winter there is a long, cold spell. Write about what happens from the fish's perspective.

Day 2: Lesson 20
"Water in its Gas Phase"



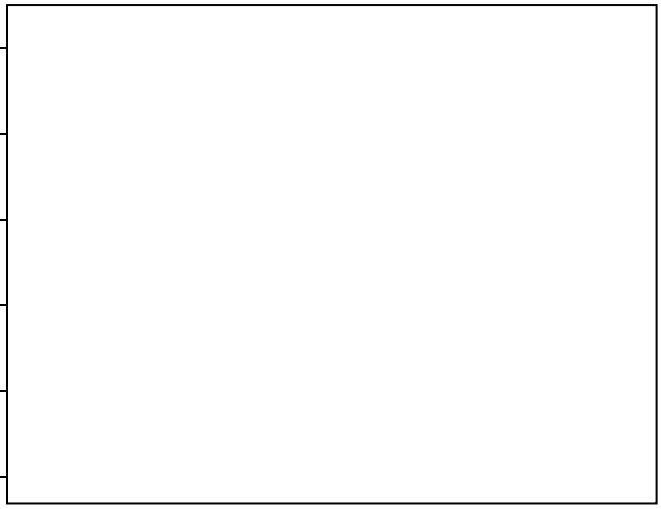


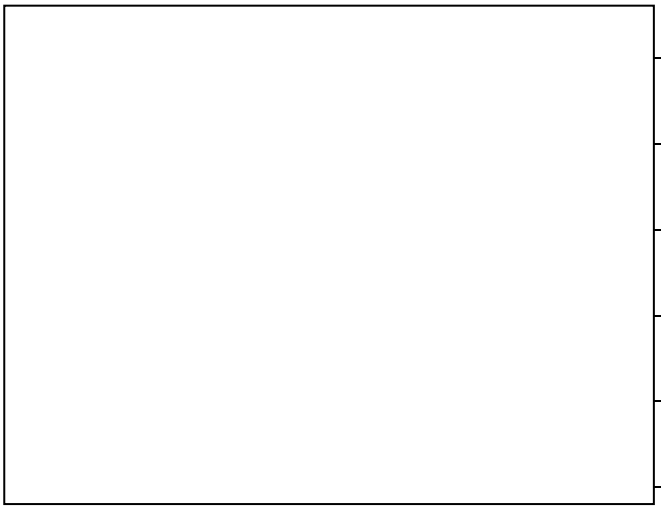
Day 2: Lesson 20
"Water in its Gas Phase"

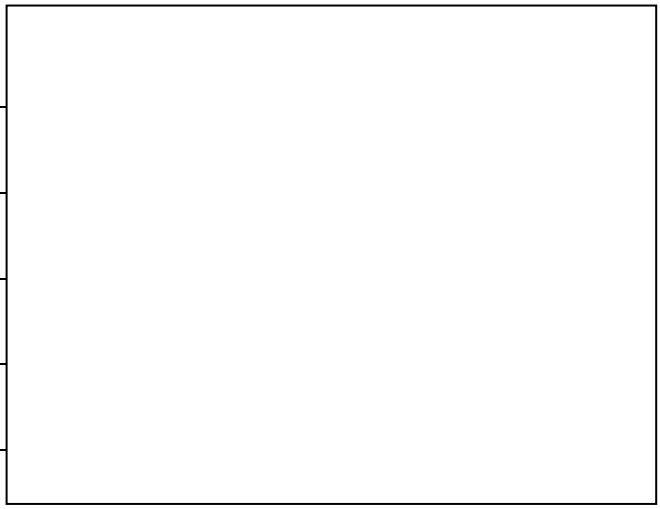
Make a drawing that describes the basics of how it rains. Start with a body of water (like a lake), and use wavy lines to represent water vapor rising. Have a cloud forming above, but then do something to make it clear that the cloud moves and gets heavier. Typically, the darker the cloud, the heavier it is. Then show the cloud making rain somewhere away from the body of water.

Write a description of the process in your drawing.

Day 2: Lesson 21"Water is Cohesive and Adhesive"





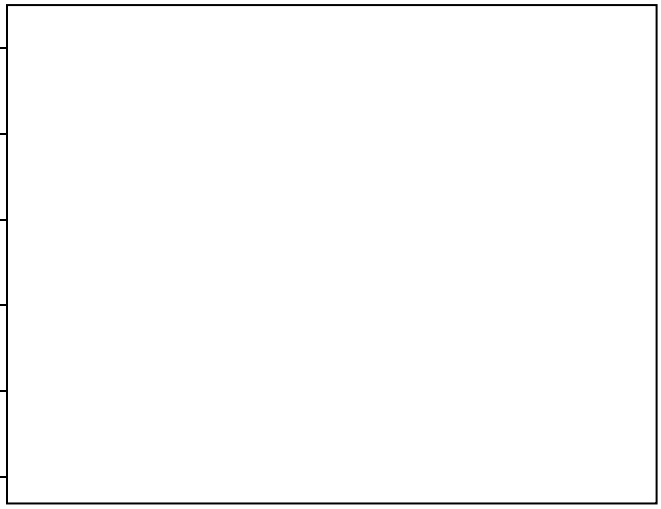


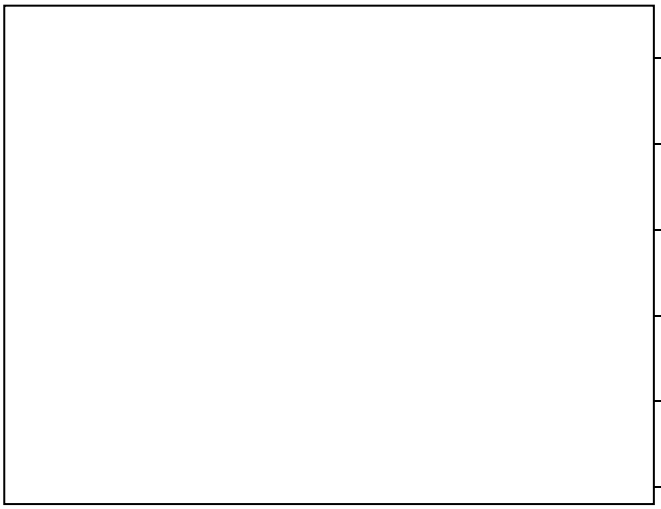
Day 2: Lesson 21
"Water is Cohesive and Adhesive"

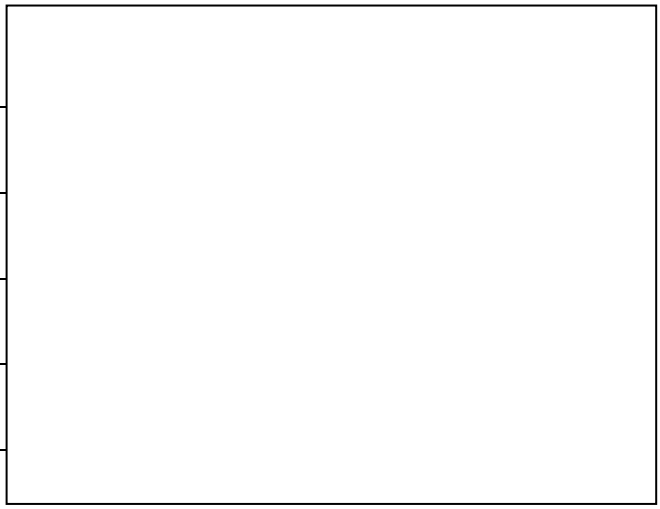
Write an explanation of what happened in the Skating Drops Experiment. Explain why some drops of water did not boil, and why they moved around the pan.

Explain why after a while, there was only one drop in the pan, regardless of how many little drops were initially made when you poured water into the pan.

Day 2: Lesson 22"What is Water?"

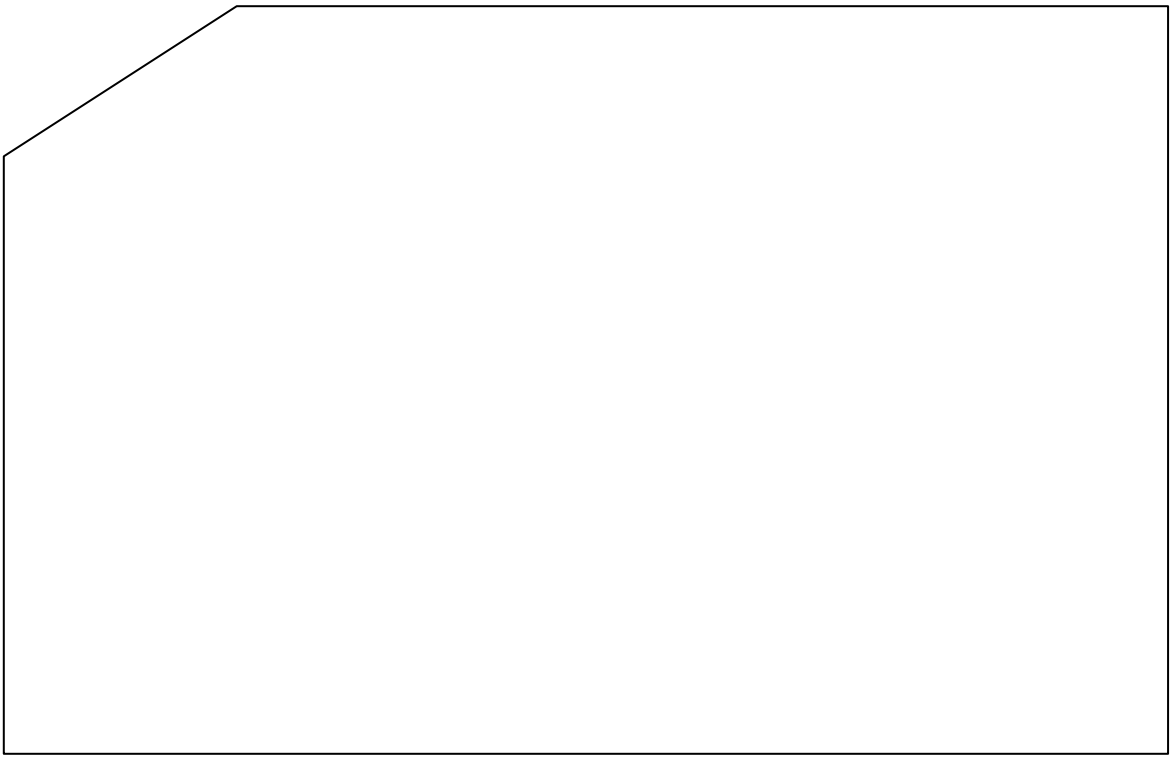






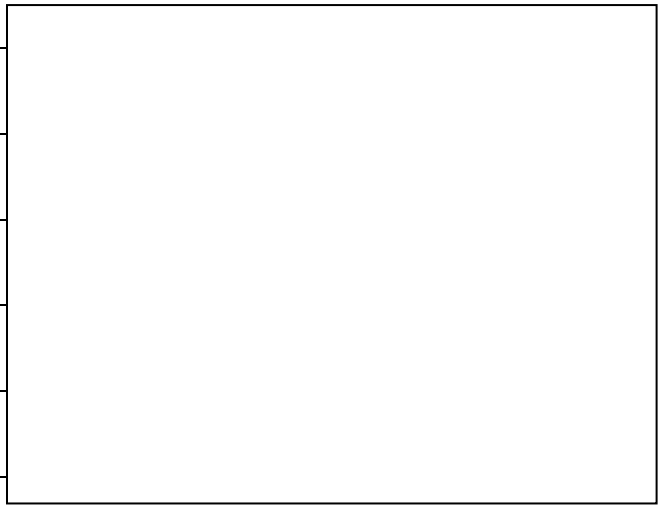
Day 2: Lesson 22
"What is Water?"

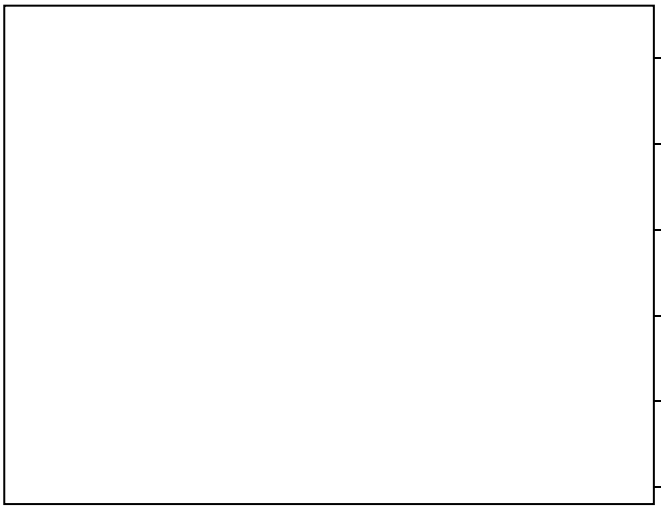
Make a drawing of the experiment. Draw three glasses that have water in them, and draw each with a battery under the water. Label them as "No Epsom Salt," "Some Epsom Salt," and "More Epsom Salt." Draw bubbles coming off the battery the way you saw them in the experiment, illustrating how many bubbles you saw in each case.

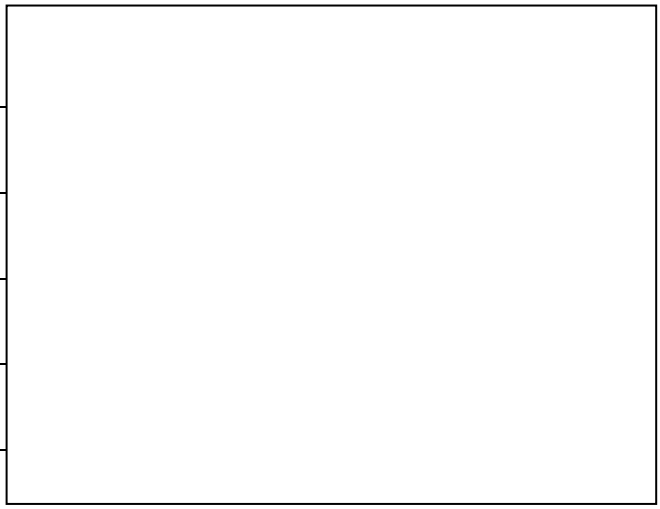


Explain what the bubbles are and where they came from.

Day 2: Lesson 23 "What is a Solution"







Day 2: Lesson 23
"What is a Solution"

1) If you dissolve sugar in water, what is the solute? _____

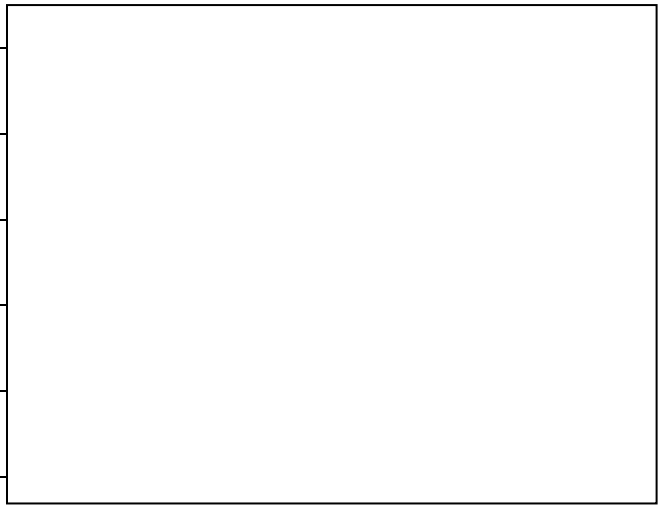
2) What is the solvent?_____

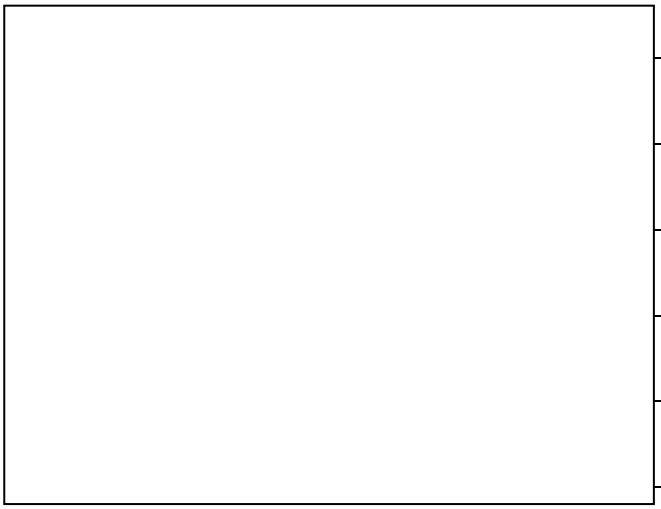
3) If you allowed all the water from sugar water solution to evaporate, what would be left? _____

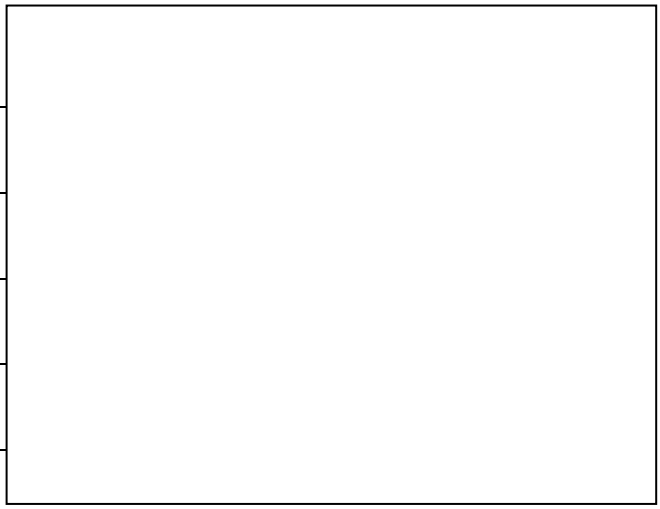
4)Look around the house for a few solids (other than Epsom salt and table salt) that you can try to dissolve in water. See if the dissolve in water by adding a little bit of water and stirring. Remember, it dissolves if you cannot see the solid anymore. You might see some color, because dissolved solids can give color to a solution. However, you shouldn't see the solid after you stir for a while. Continue the experiment until you have at least 2 solids that dissolve in water.

Solid	Did it Dissolve?	If it dissolved, identify the solute	If it dissolved, identify the solvent	What would you call the resulting solution?

Day 2: Lesson 24 "Other Kinds of Solutions"







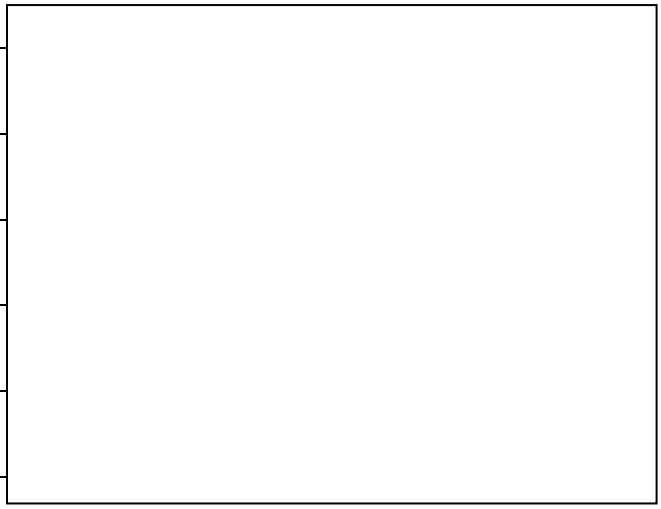
Day 2: Lesson 24
"Other Kinds of Solutions"

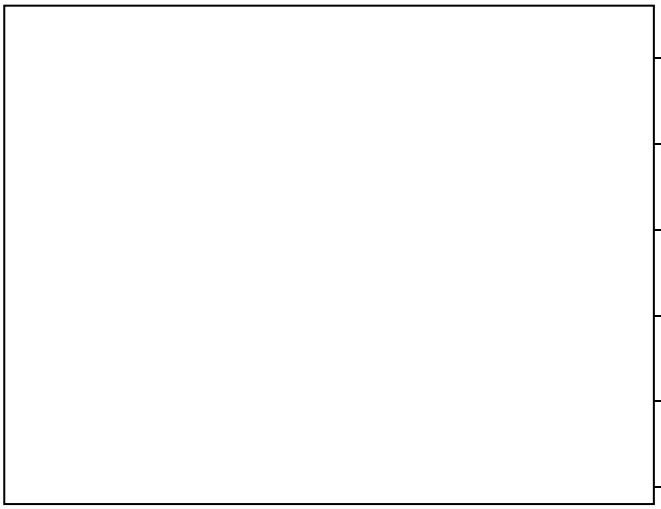
Draw a picture of what happened to in the experiment.

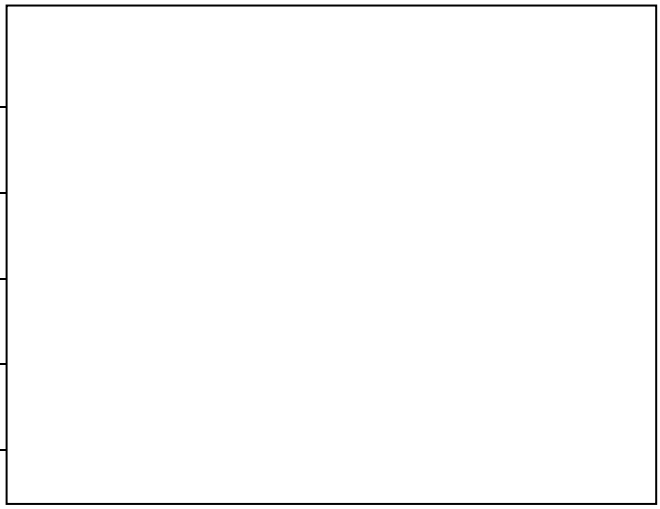
Write an explanation for what happened in your experiment. Explain what made the fountain and how the Mentos helped that to happen.

Predict the size of the fountain if you used a bottle of Diet Coke that had been warmed to a higher temperature.

Day 2: Lesson 25"Don't Forget About Air"







Day 2: Lesson 25
"Don't Forget About Air"

Explain the results of the experiment in your own words. Use those results to explain why we know air exists even though we can't see it.

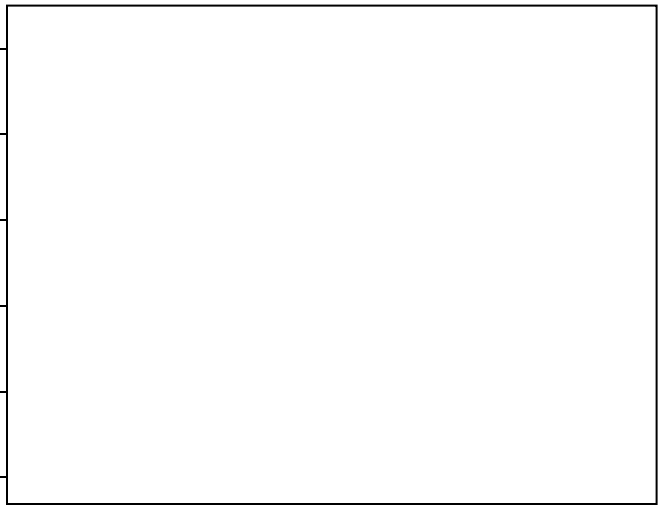
Day 2: Lesson 26 "Sometimes Hot Air Is Good!"

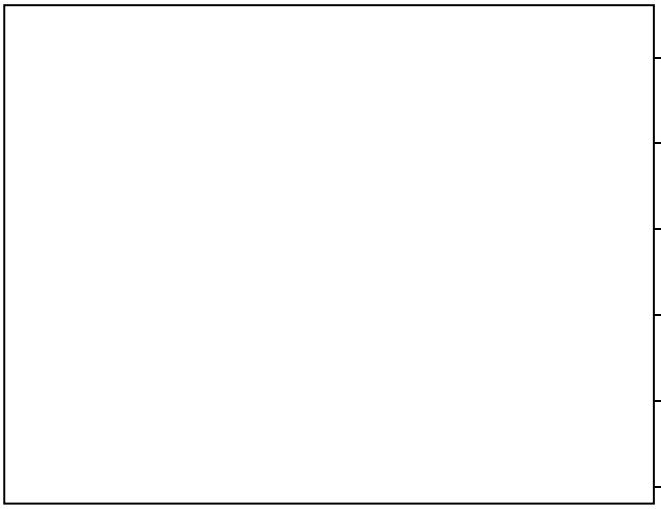
Day 2: Lesson 26
"Sometimes Hot Air is Good"

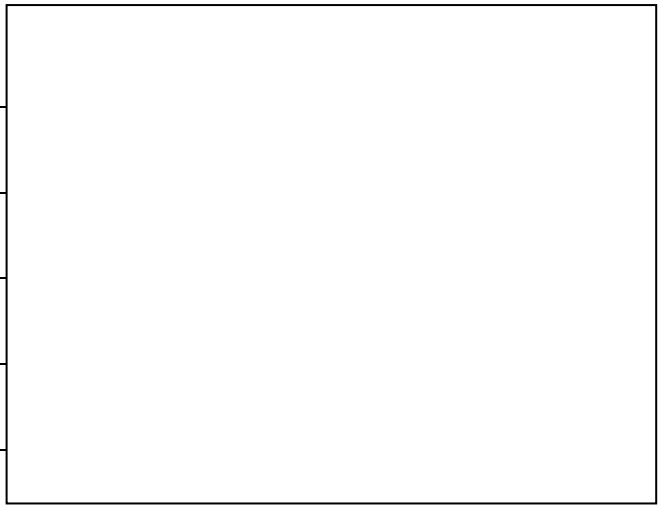
Draw a picture showing the bottle and balloon before the bottle was heated	Draw a picture showing the bottle and balloon after it had been heated for several minutes.

Explain why the balloon inflated when the bottle was heated.

Day 2: Lesson 27 "Some Weighty Truths"







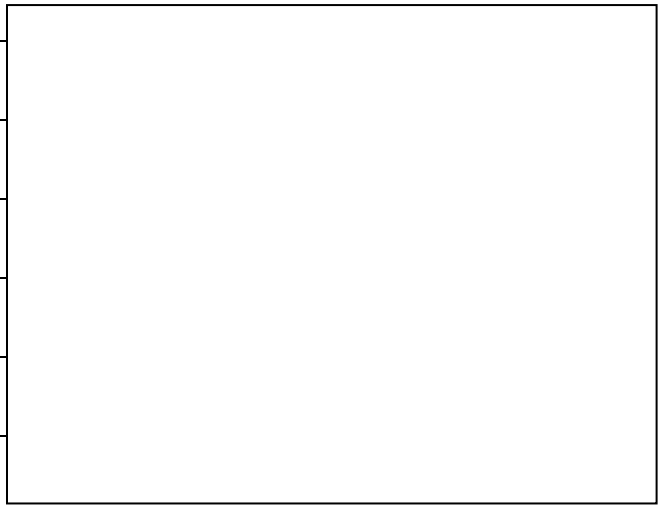
Day 2: Lesson 27
"Some Weighty Truths"

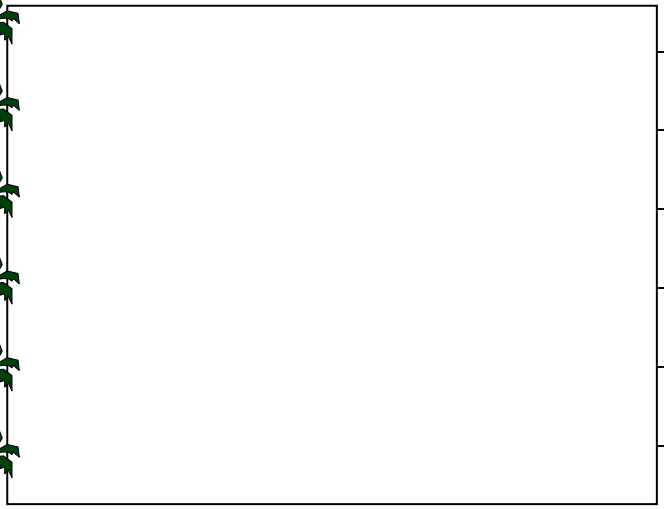
1. What did the Bible tell us about air long before science figured it out?

Explain why a hot-air balloon floats when the heat is turned up and comes back to the ground when the heat is turned down.

Day 3: Land, Sea, and Plants

Day 3: Lesson 31 "Land, Sea and Plants"



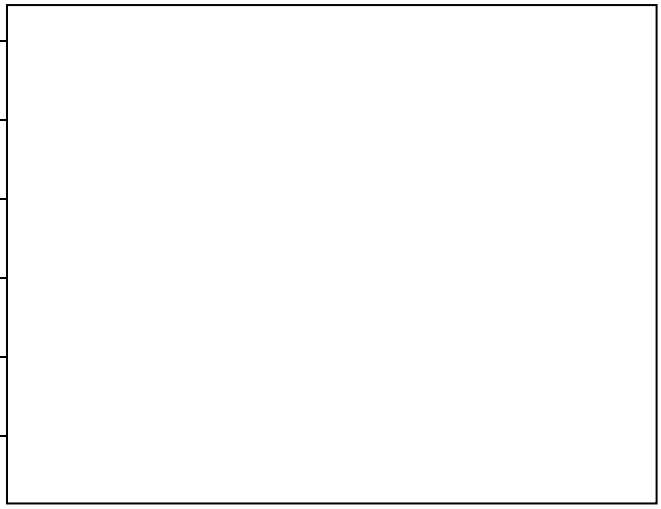


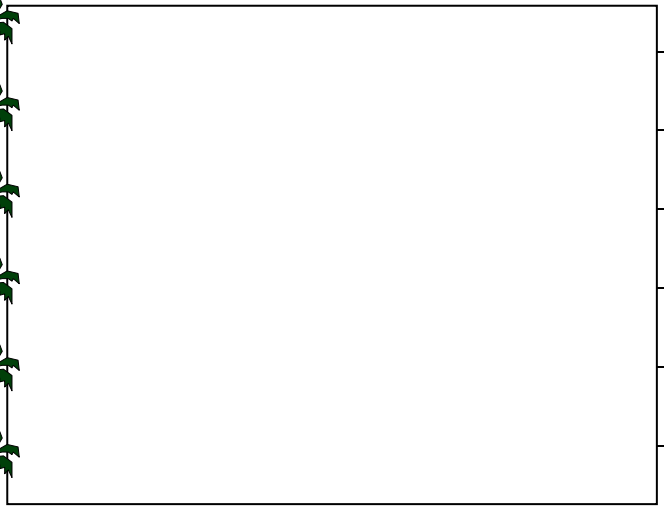
Day 3: Lesson 31

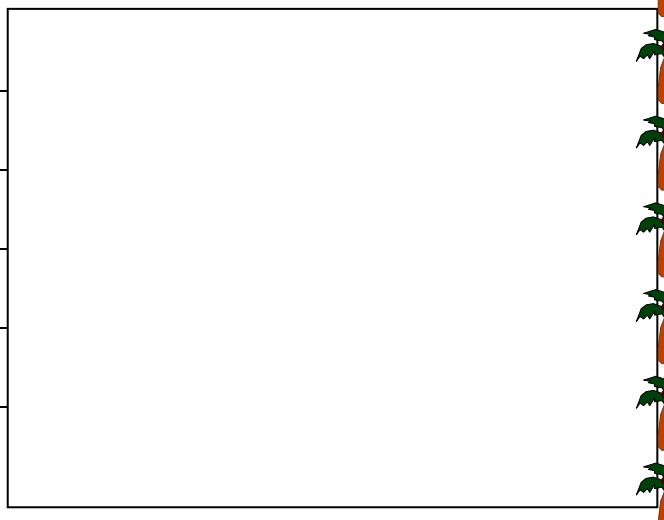
"Land, Sea and Plants"

Explain what it means for something to decompose. Explain how that relates to humus, and explain how humus relates to soil.

Day 3: Lesson 32 "More Dirt on Soil"





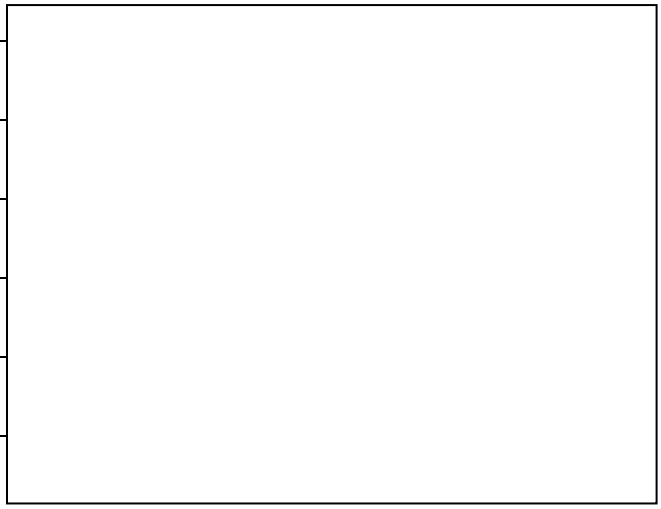


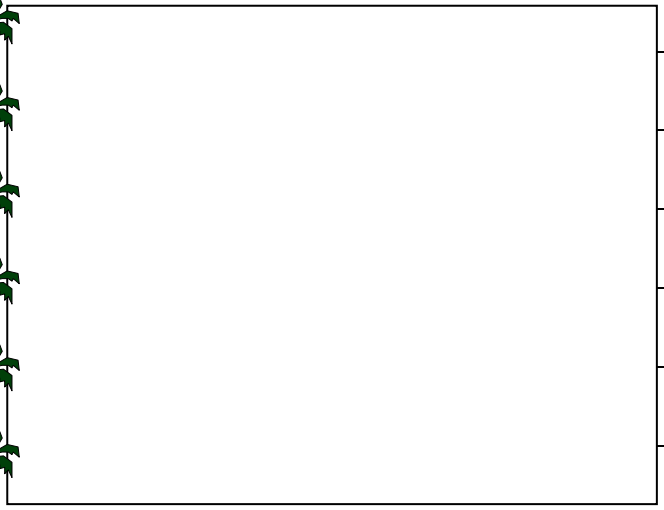
Day 3: Lesson 32

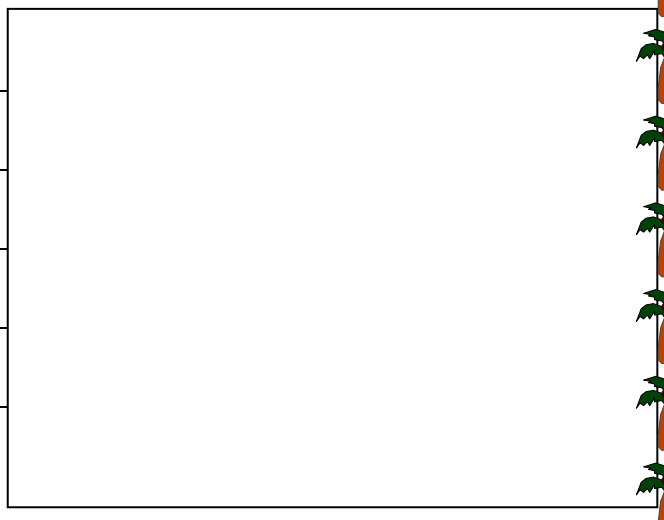
"More Dirt on Soil"

Explain why freezing and melting eventually cause rocks to break. Using your own words, describe what makes up soil.

Day 3:Lesson 33 "The Rock Cycle"







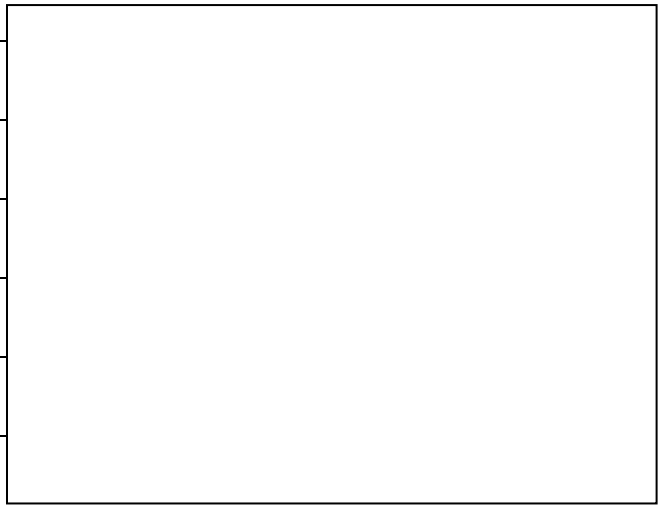
Day 3: Lesson 33

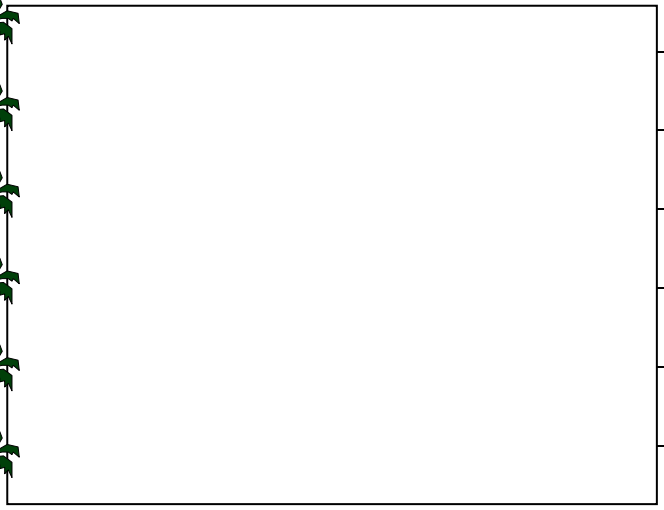
"The Rock Cycle"

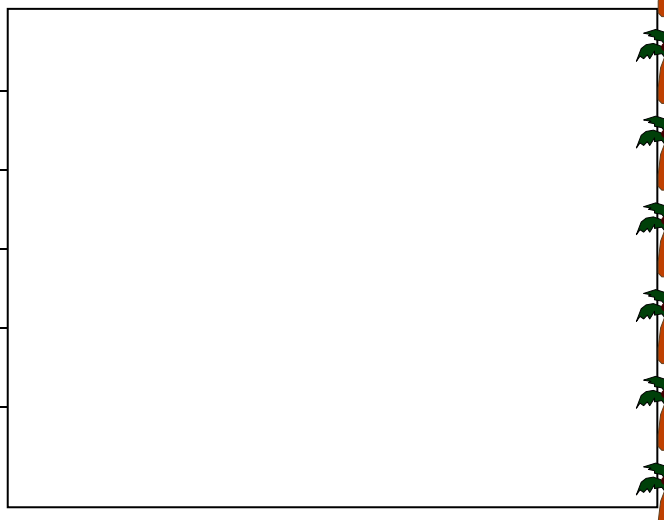
Draw the rock cycle (see page 101 in the book).

Explain the rock cycle in your own words.

Day 3:Lesson 34 "The Water in the Sea"







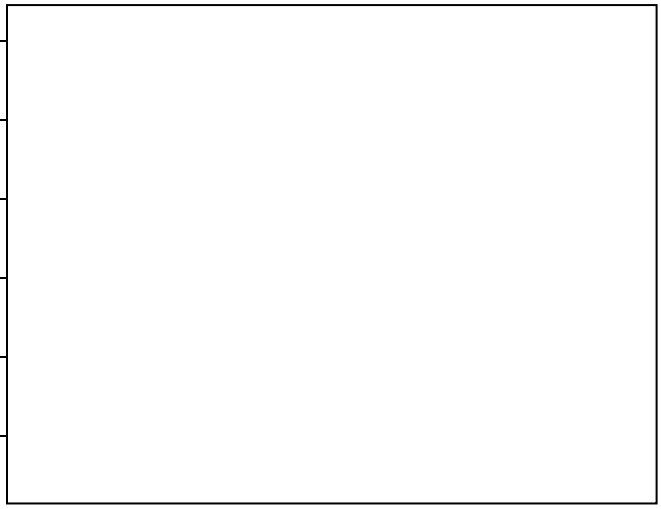
Day 3: Lesson 34

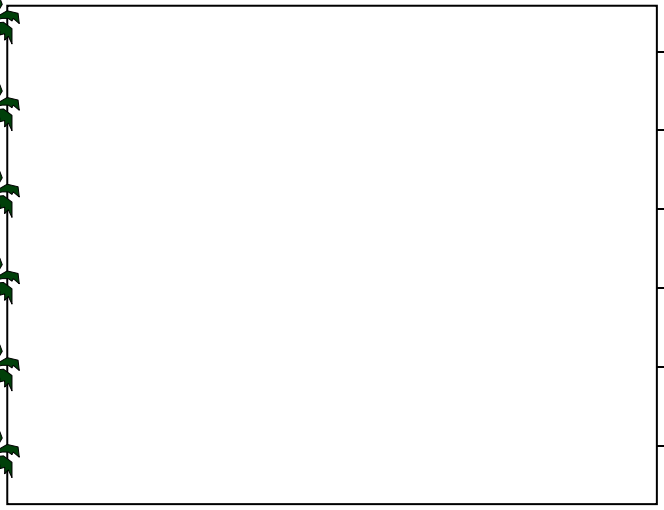
"The Water in the Sea"

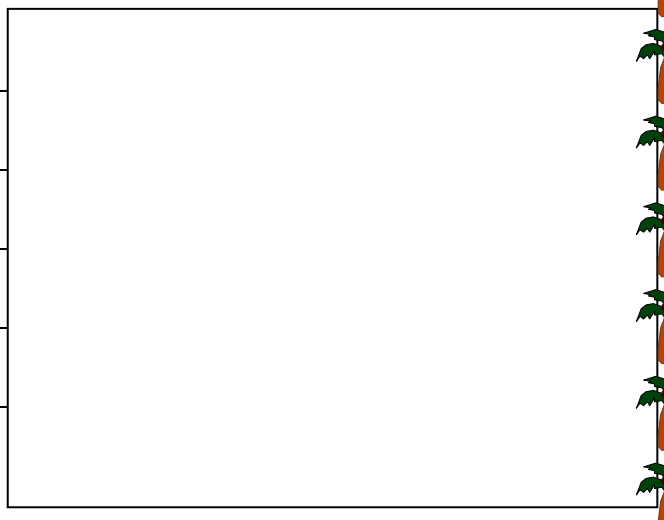
Make a drawing of the glass as it looked in step 11 of the experiment. Label which layer has freshwater and which layer has saltwater

Explain why the layers formed the way they did.

Day 3: Lesson 35 "More on Seawater"







Day 3: Lesson 35

"More on Seawater"

Write a story about a snowflake. It falls on the top of a mountain and doesn't melt away. Eventually, it ends up as part of an iceberg floating in the ocean. Tell the story of how it went from the top of a mountain to floating in the ocean from the snowflake's point of view. Also, indicate which requires a *lower* temperature: the formation of an iceberg or the formation of frozen seawater.

Day 3: Lesson 36

"Salt and Ice"

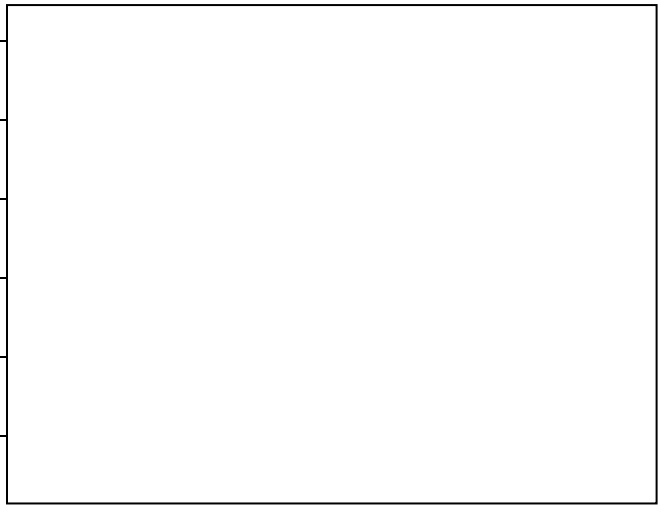
Write your own explanation for why ice melts when you put salt on it. Use the word "equilibrium" in your explanation, and also explain why this doesn't work when it gets very cold.

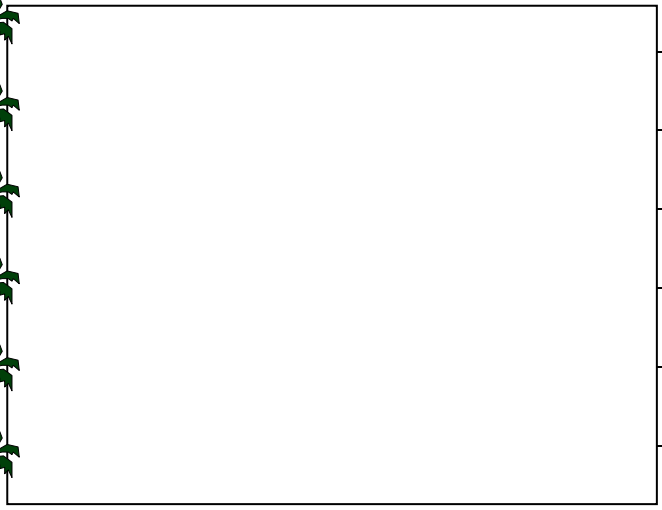
Day 3: Lesson 37

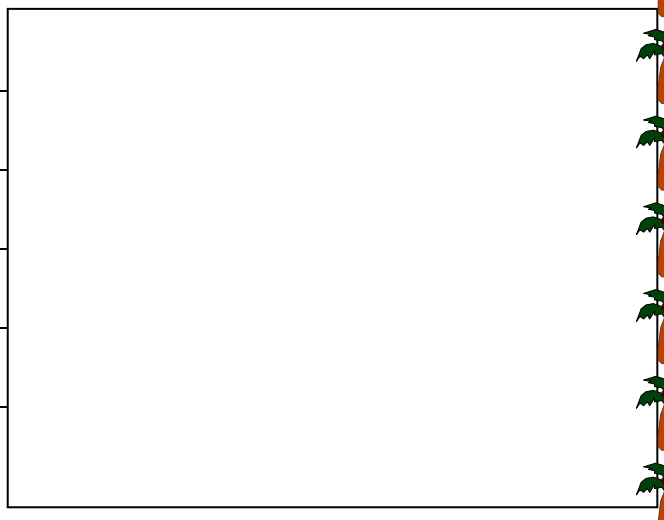
"Hypothesis and Experiment"

Evaluate your hypothesis. Indicate whether or not your answer was correct. If your answer was incorrect, write the correct answer down as well as an explanation in your own words. If your answer was correct but your explanation was wrong, write down the correct explanation in your own words.

Day 3: Lesson 38 "Plants-The Beginning"







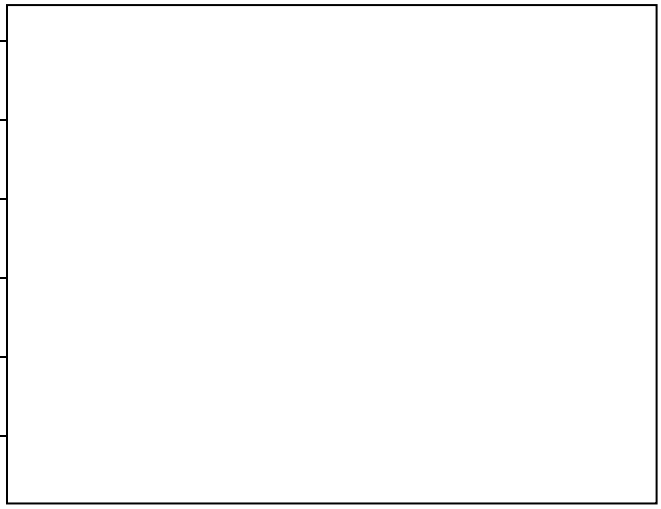
Day 3: Lesson 38

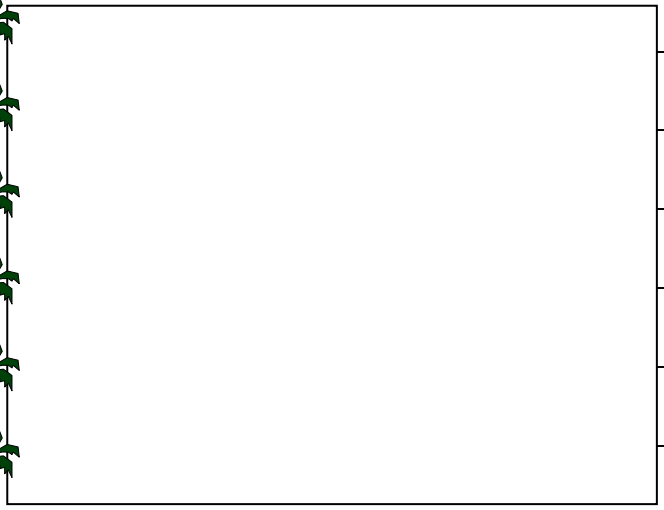
"Plants – The Beginning"

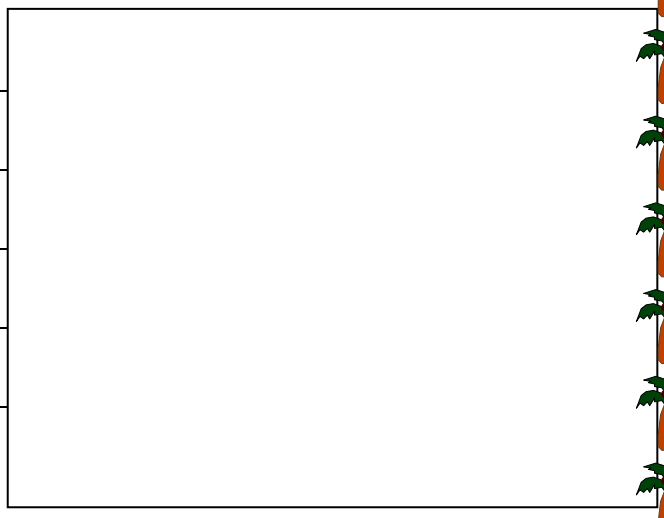
Draw a picture of your opened-up bean seed, labeling the cotyledons and the embryo

Explain what the cotyledons are for and what the embryo will end up becoming.

Day 3:Lesson 39 "The First Stage of Germination"







Day 3: Lesson 39

"The First Stage of Germination"

Use the areas below to draw pictures of your germinating bean seeds. (See page 119 in your book.)

Day 3: Lesson 39 – Continued

"The First Stage of Germination"

Use the areas below to draw pictures of your germinating bean seeds. (See page 119 in your book.)

Day 3: Lesson 39 – Continued

"The First Stage of Germination"

Use the areas below to draw pictures of your germinating bean seeds. (See page 119 in your book.)

Day 3: Lesson 39 – Continued

"The First Stage of Germination"

Go back over your drawings of your bean seeds and label the radicle and the primary root (if showing).

The Germination of a Seed

This section will be filled out over several days.

1. testa

2. root system

3. hypocotyl

4. stem

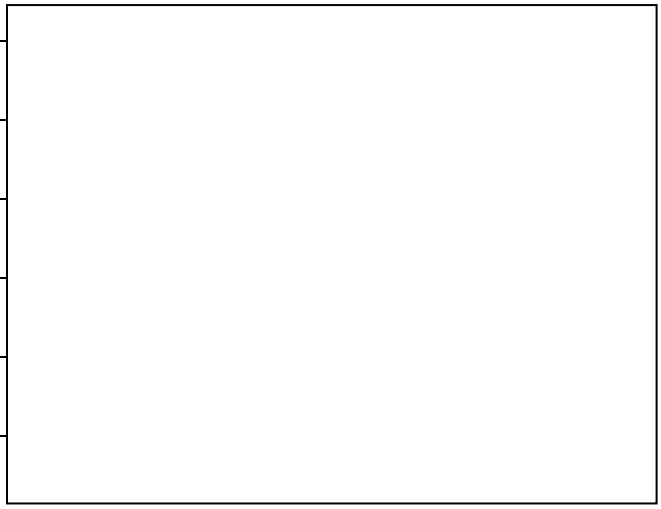
5. true leaves

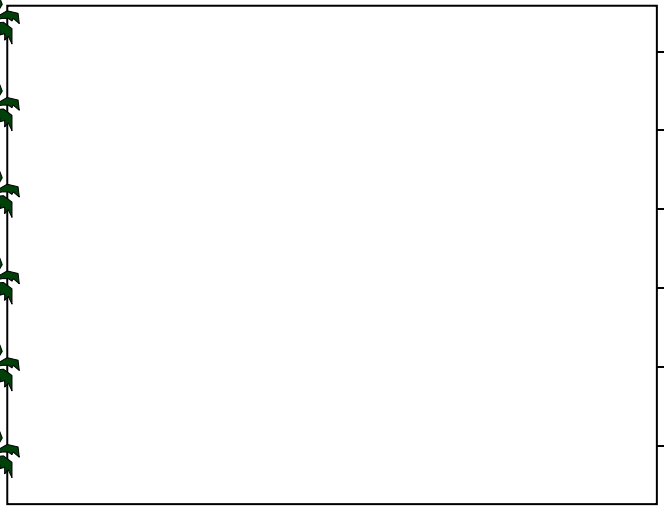
6. withering

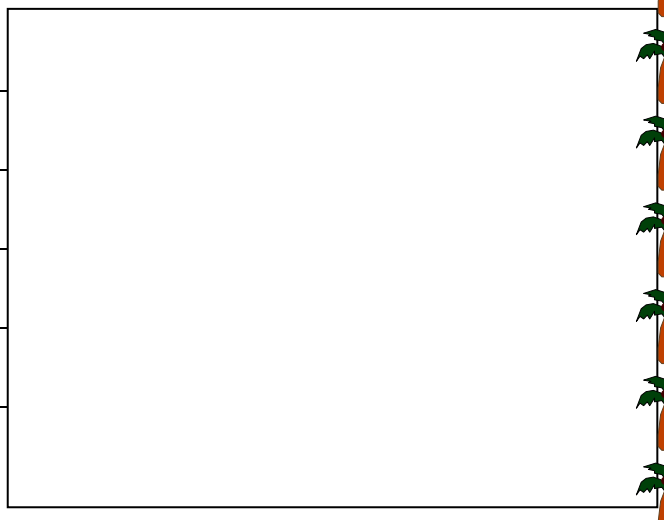
Photosynthesis

(This page will be filled out during lesson 42.) Write a description of photosynthesis. Include everything that is needed, what chlorophyll does for the process and what is produced.

Day 3:Lesson 40 "More on Roots and Germination"







Day 3: Lesson 40

"More on Roots and Germination"

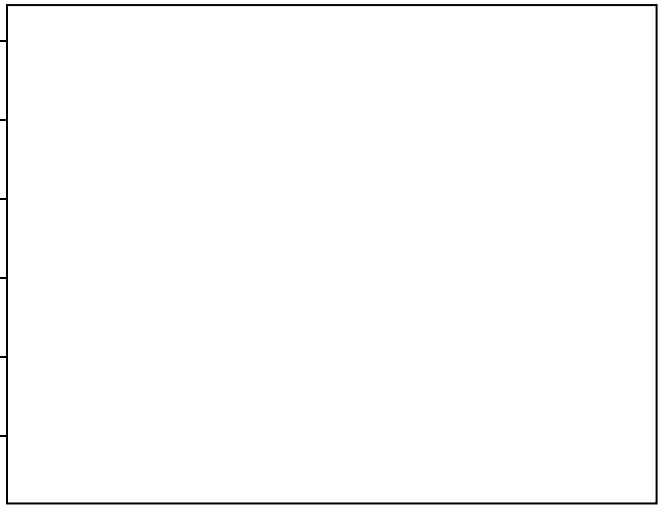
Look at the drawings you have made over the past few days. Find a few that show the hypocotyl and label it. On the page labeled "The Germination of a Seed," find the section labeled "hypocotyl." Write what your learned about today in that section. Include what the hypocotyl will eventually become and what the function of it will be.

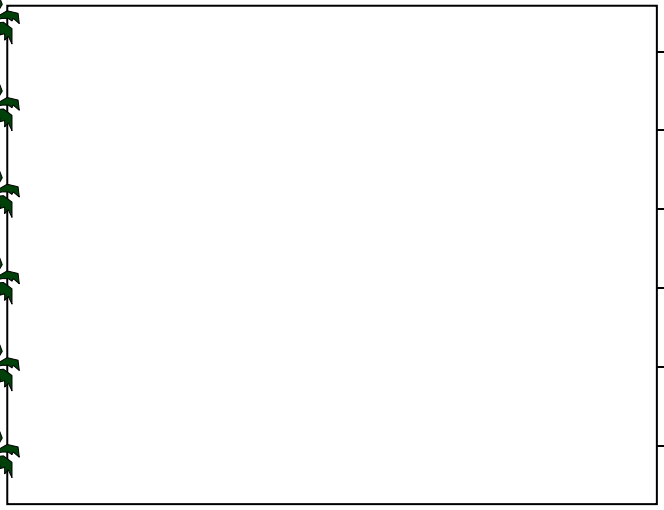
Day 3: Lesson 41

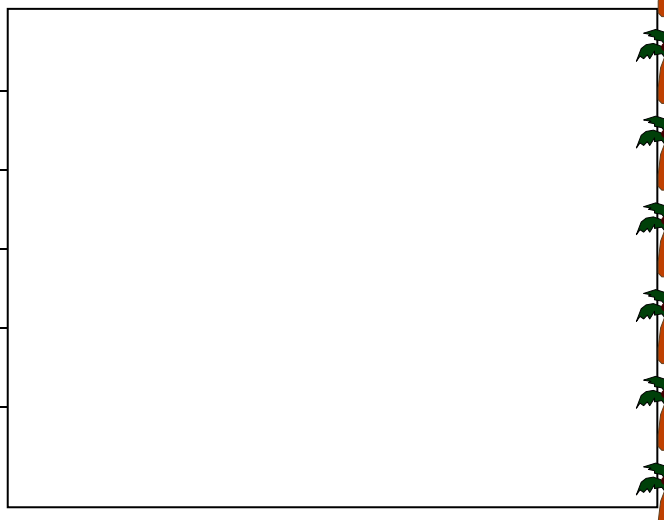
"Plants – Leaves, Water and Transpiration"

Look at the drawings you made over the past few days. Find a few that show a seedling that looks like the picture on page 123. Label the stem, cotyledons, epicotyl, and true leaves. Find the page labeled "The Germination of a Seed." Add the fourth step describing the hypocotyl straightening into the stem. Add the fifth step describing the true leaves emerging and mention what the epicotyl is. Add the sixth step describing the withering and removal of the cotyledons. Now review all the steps and think about how you observed each of these things happening over a few days' time.

Day 3: Lesson 42 "Plants-The Importance of Leaves"







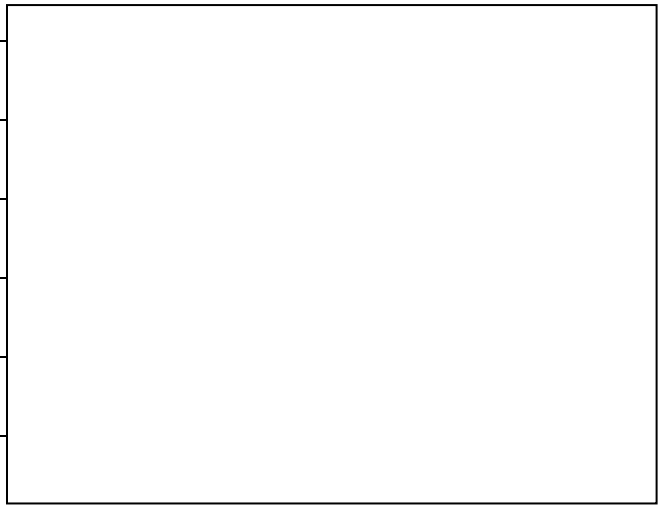
Day 3: Lesson 42

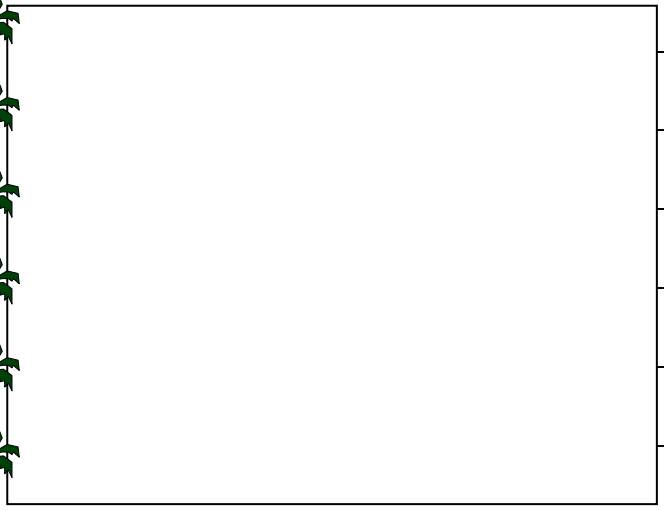
"Plants – The Importance of Leaves"

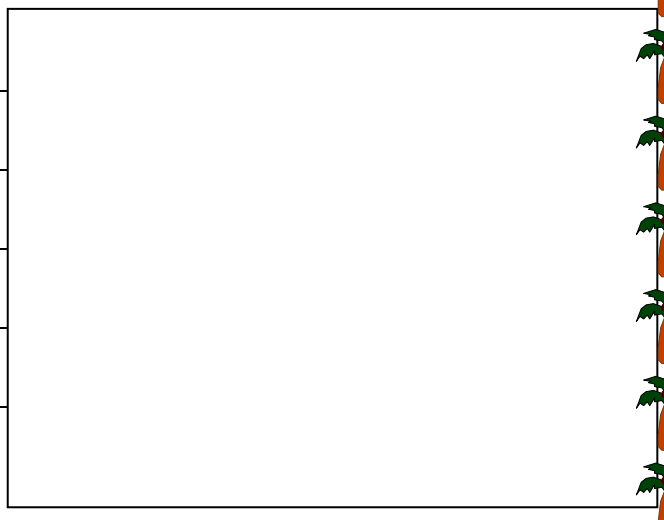
First, go back and fill in the page labeled "Photosynthesis". Below, draw a plant showing its roots, stem, and leaves. Label those three things.

Explain the job of the roots, the stem, and the leaves.

Day 3: Lesson 43 "Plants-How They Store Their Food"







Day 3: Lesson 43

"Plants – How They Store Their Food"

Results from experiment:

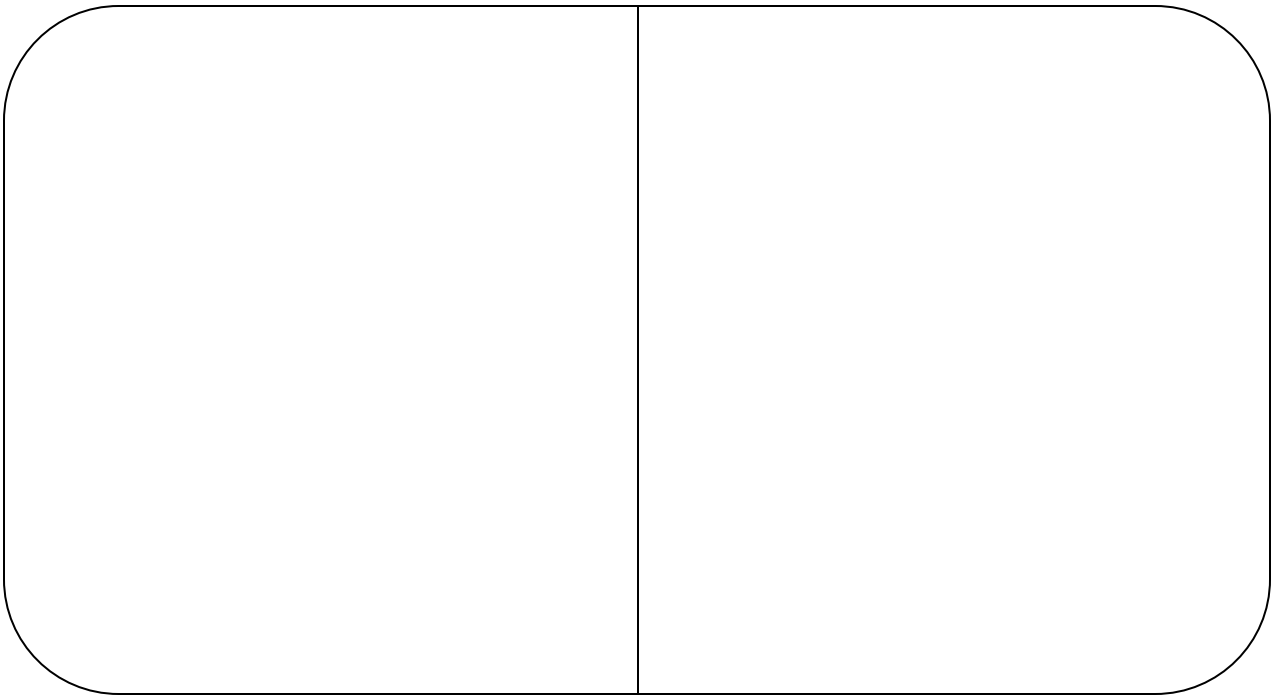
Substance	Color
Iodine	
Bread	
Potato	
Cracker	
Butter	
Celery	
Cheese	
Ripe banana	
Very green banana	
White paper	

Write an explanation of why the iodine turned dark on some of the things you tested, but not the other things. For those things that contained starch, explain why there is starch present.

Day 3: Lesson 44

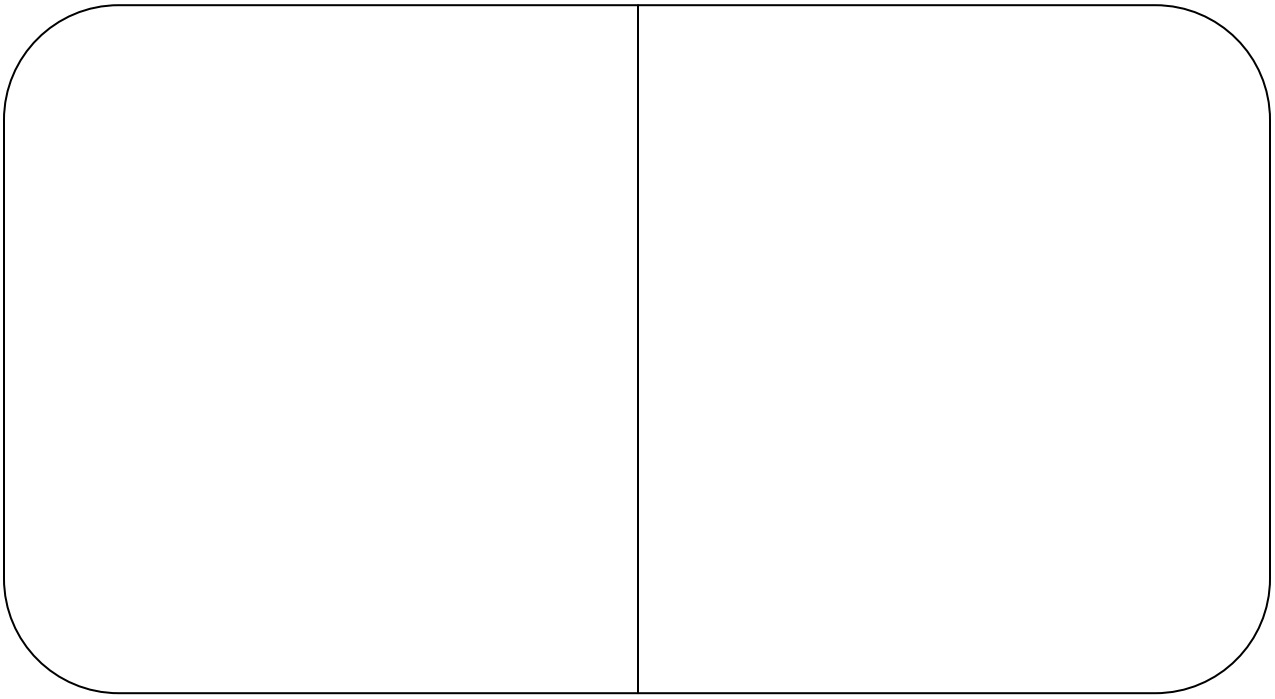
"Plants – Movement"

Draw a before and after illustration for each of your plants from your experiment. Underneath each drawing explain why the experiment turned out the way it did, and use the proper scientific term for each situation.

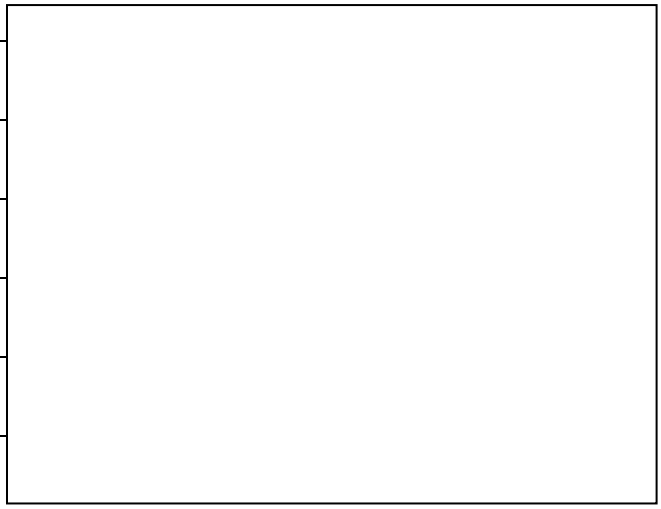


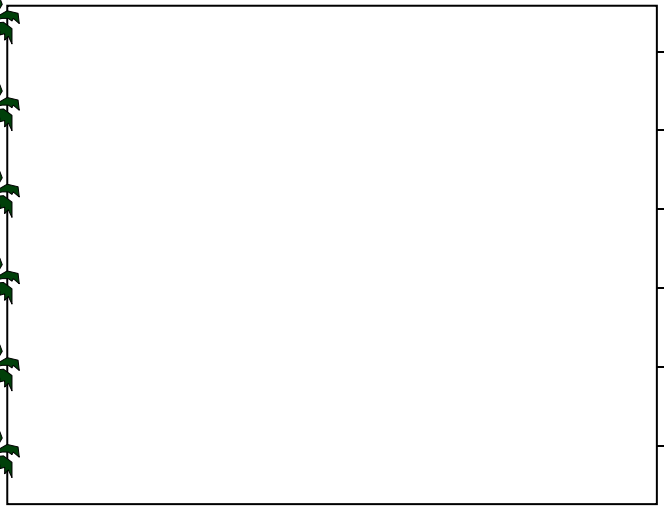
Day 3: Lesson 44 – continued

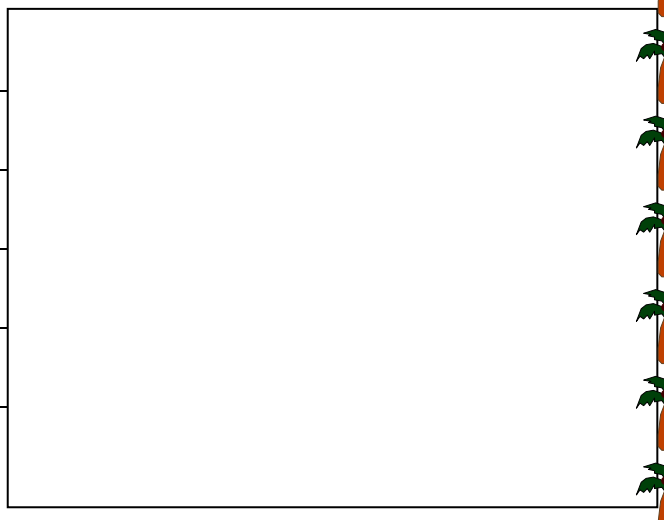
"Plants – Movement"



Day 3: Lesson 45 "Examining a Leaf"







Day 3: Lesson 45

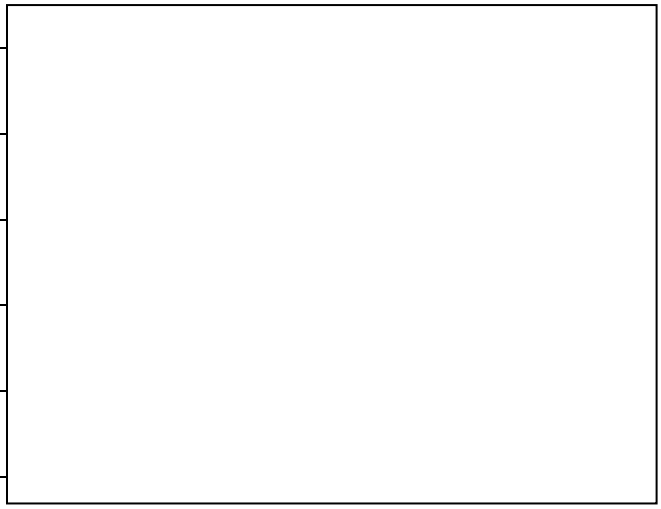
"Examining a Leaf"

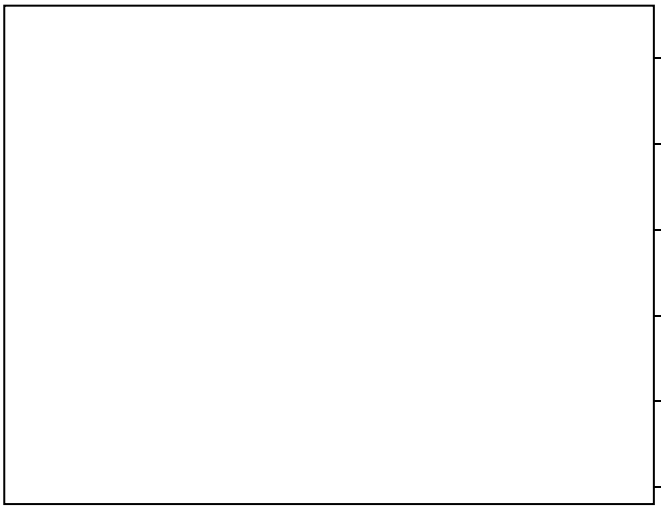
Draw your leaf and label the following things: petiole, midrib, other veins, blade, and apex.

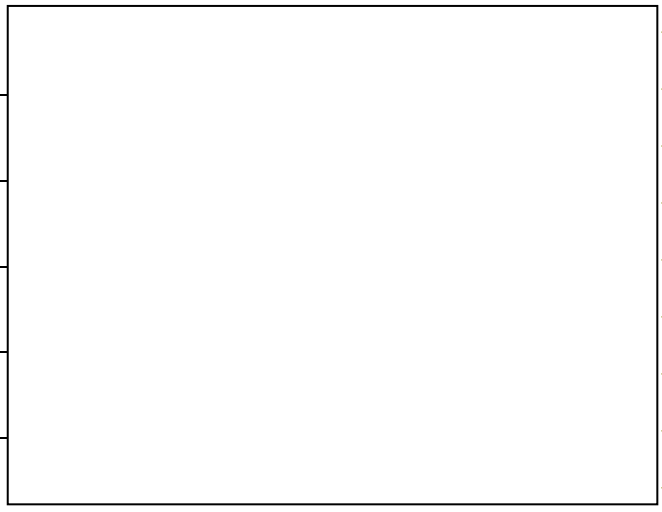
Note which side of the blade is darkest and explain why. Also, note which side has the most stomata and explain why.

Day 4:
Sun, Moon and Stars

Day 4: Lesson 46 "The Sun"







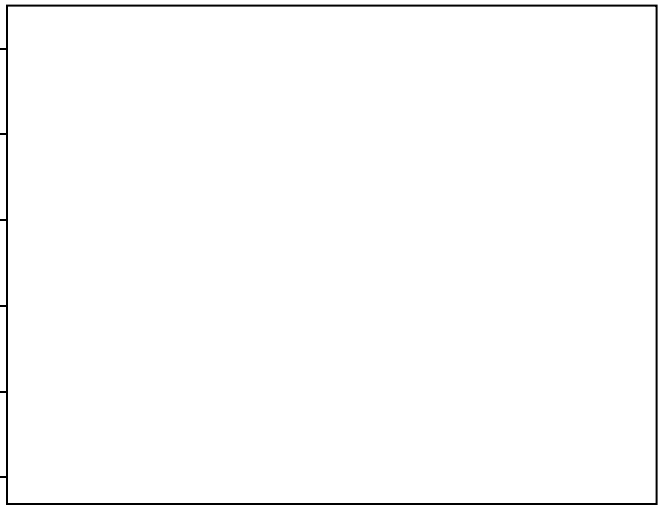
Day 4: Lesson 46

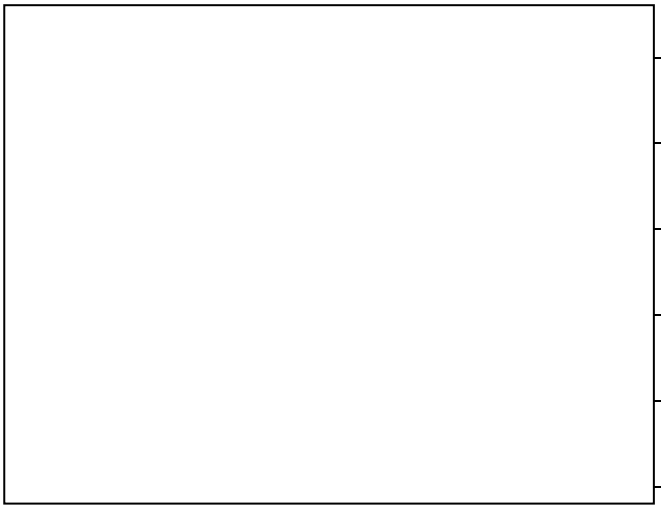
"The Sun"

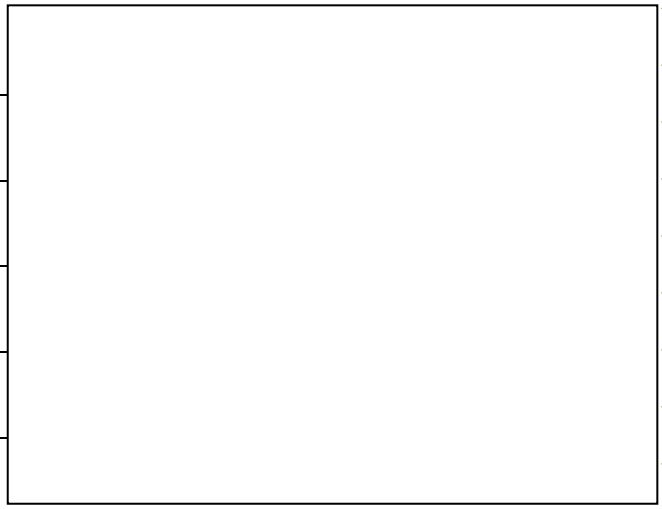
Draw what happened in your experiment, as if you were looking at it from above. Draw the toothpick as a dot on the paper, because from above, that's what it would look like. Now draw a line for each of the three shadows you marked. Try to accurately show what happened to both the length and the position of the shadow.

Explain why both changed

Day 4: Lesson 47 "Using the Sun to Mark Time"







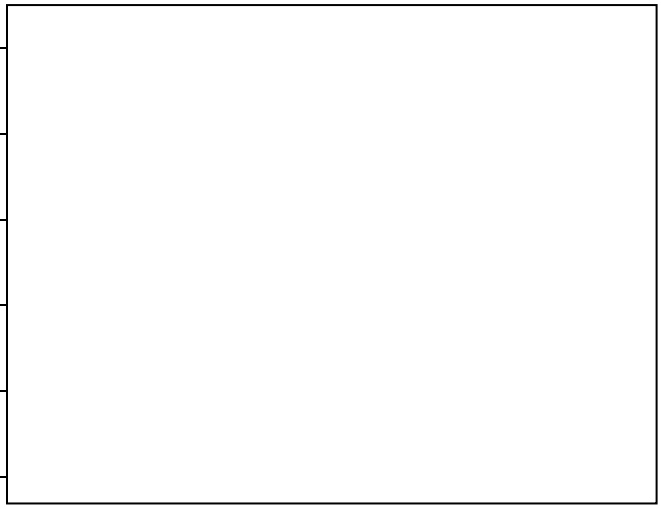
Day 4: Lesson 47

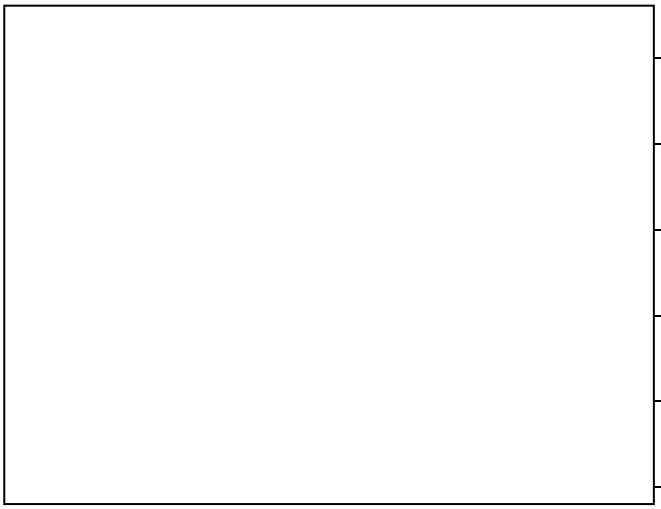
"Using the Sun to Mark Time"

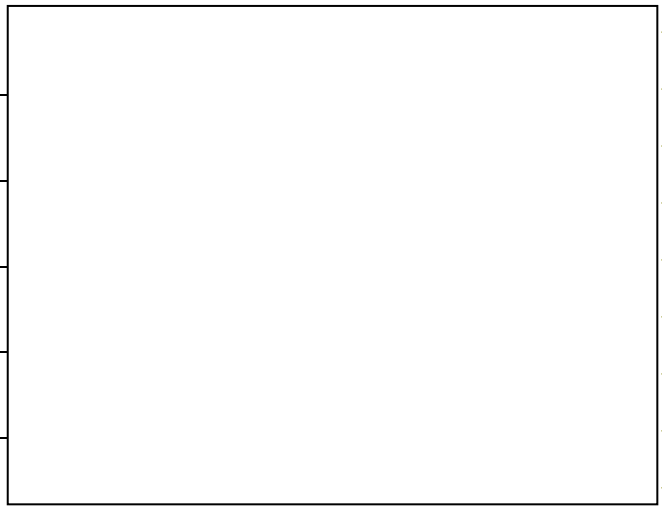
Explain how a sundial tells the time of day.

Draw a picture of a sundial like the one on pg 144. Draw a shadow coming from the gnomon that indicates it is 11:00 AM. Also, indicate what time of day the sun is highest in the sky.

Day 4: Lesson 48 "Colors in the Sky"







Day 4: Lesson 48

"Colors in the Sky"

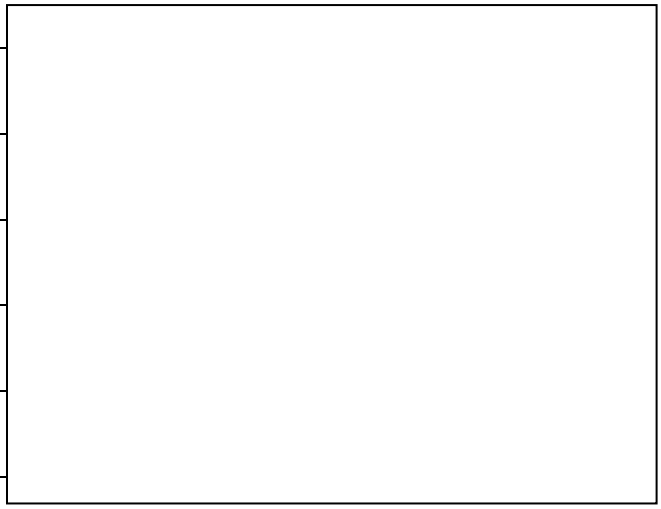
Make a drawing that explains why a sunset looks yellow, orange and red. Draw a scene like the one on page 147. Then, draw three arrows coming from the sun. Make one blue to represent Mr. Light's last name (Biv). Make one green to represent Mr. Light's middle initial. Make the other red to represent Mr. Light's first name (Roy). The blue and green arrows should start out traveling towards the person, but then they should change direction and end up pointing away from the person to represent the fact that they bounced off some dust in the air and didn't reach the person's eyes. However, the red arrow should travel straight to the person's eyes.

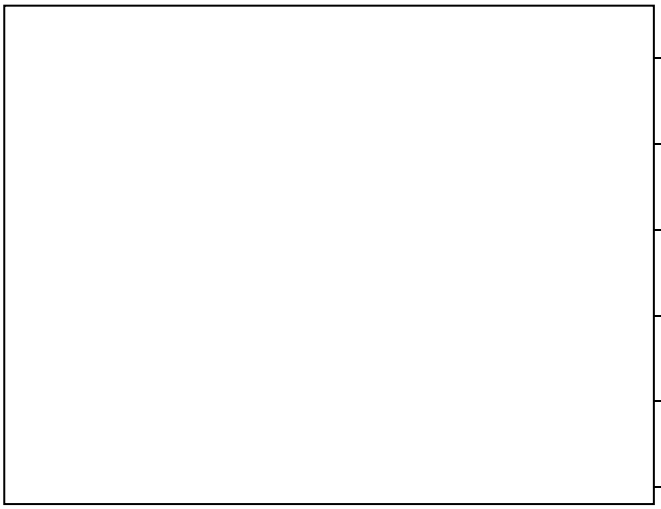
Day 4: Lesson 48 continued

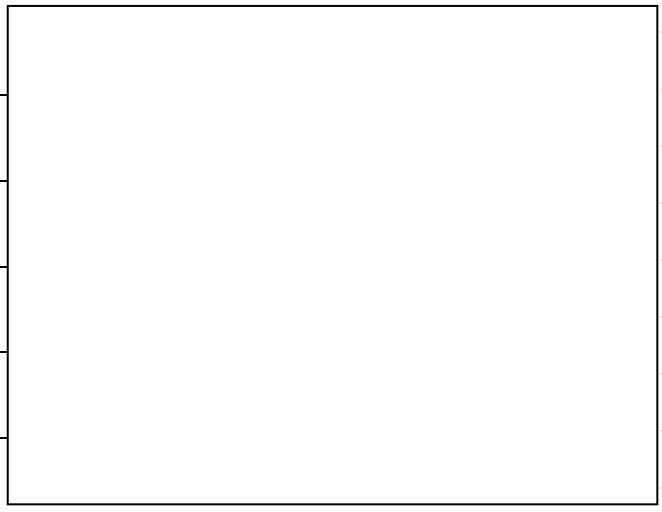
"Colors in the Sky"

Explain why sunrises and sunsets have yellow, orange, and red colors in them.

Day 4: Lesson 49"What is Moving?"







Day 4: Lesson 49

"What is Moving? "

Draw a picture that shows the sun moving around the earth in a circle. Use motion lines (see picture on pg 150) to give the impression of motion. The green lines on pg 150 are motion lines, illustrating the top is spinning. Do the same in your drawing to indicate the motion of the sun.

Explain how this could turn night into day. _____

_____

Draw a picture that shows the sun sitting still and the earth rotating. Use motion lines to indicate the motion of the earth.

Explain how this could turn night into day.

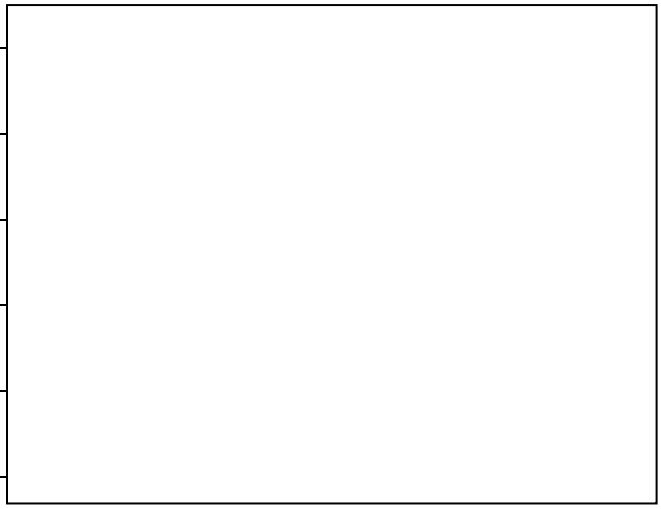
_____

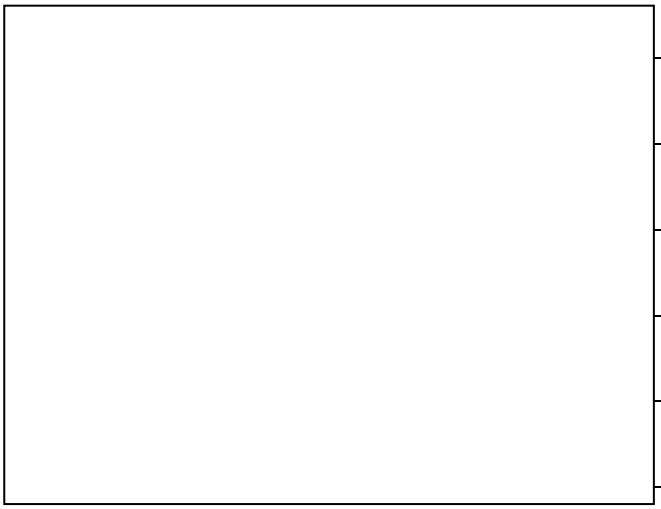
_____

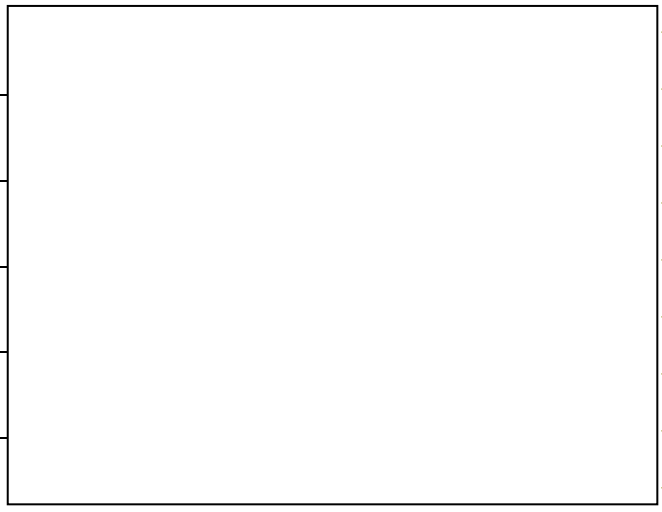
_____

Which drawing is correct?

Day 4: Lesson 50"All of Earth's Motion"





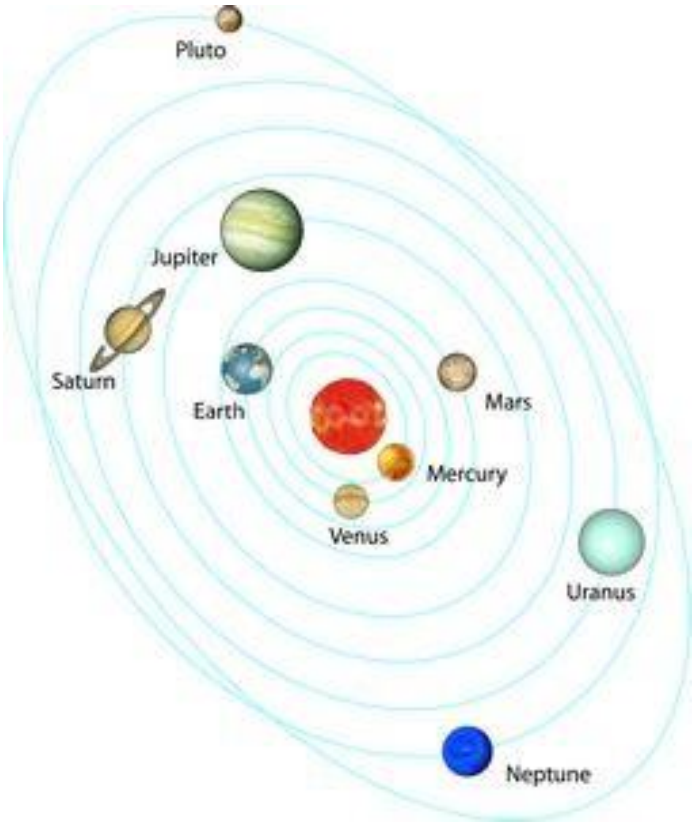


Day 4: Lesson

"All of Earth's Motion"

Draw a picture above that shows the earth orbiting the sun and at the same time rotating. Use motion lines like you did in the previous lesson. Explain below how we use the orbit of the earth around the sun to keep track of the years and the rotation of the earth to keep track of the days. Note how many times the earth rotates when it makes one full orbit around the sun.

Day 4: Lesson 51"The Solar System"



Day 4: Lesson

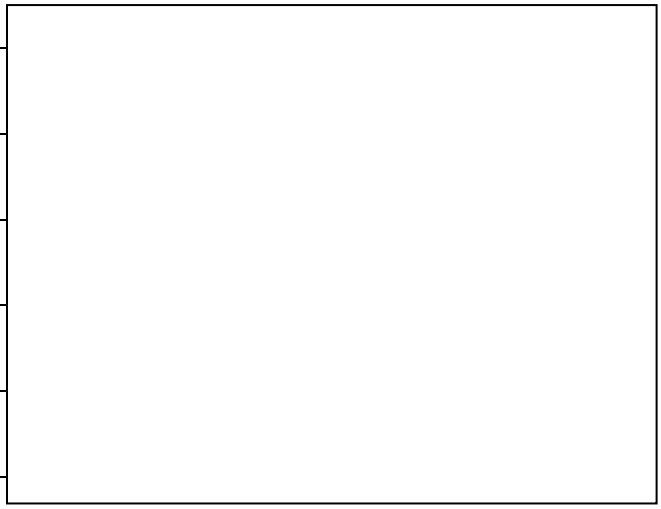
D you know what a mnemonic is? It is a phrase that helps you remember something. Do you remember how Roy G. Biv helped you remember the colors of the rainbow? Here is another example: If you want to remember what the lines of a music staff represent, you could remember "Every **G**ood **B**oy **D**oes **F**ine." This tells you the lines of a music staff represent the notes E, G, B, D and F. Make up a mnemonic that helps you remember the order of the planets, starting with Mercury and ending with Neptune (or Pluto). Don't worry about the asteroid belt.

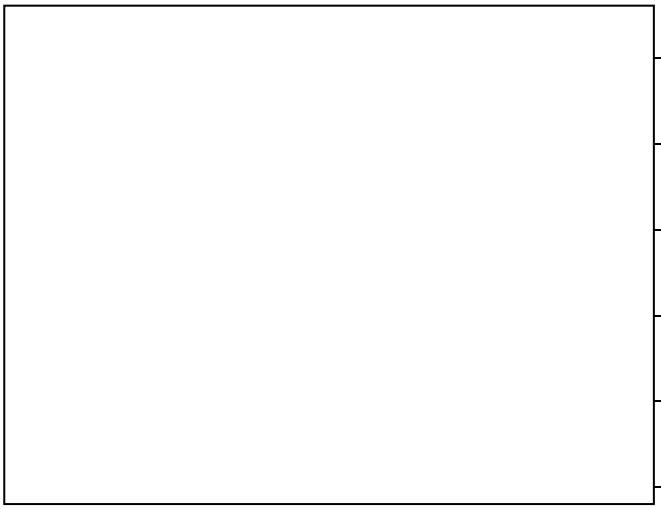
M	V	E	M

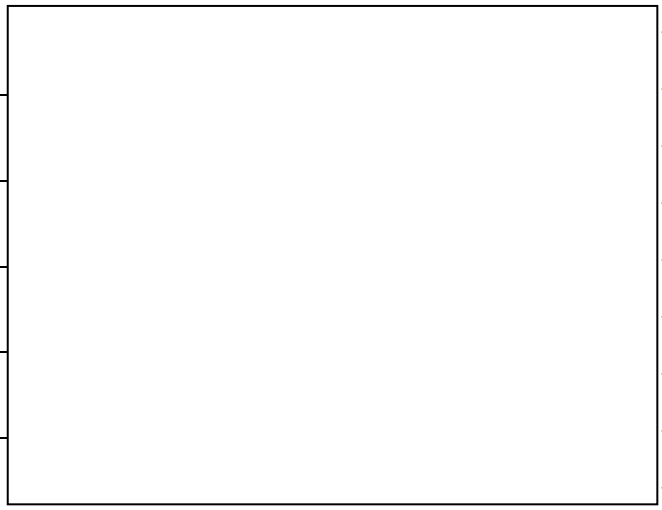
J	S	U	N	P (opt)

Draw the Solar System Below (use your mnemonic to help you)

Day 4: Lesson 52"More on the Solar System"







Day 4: Lesson 52

"More on the Solar System"

List the planets in order of their size. Start with the smallest planet, and end with the largest.

Smallest Planet:

Largest Planet

Explain two differences between planets and stars.

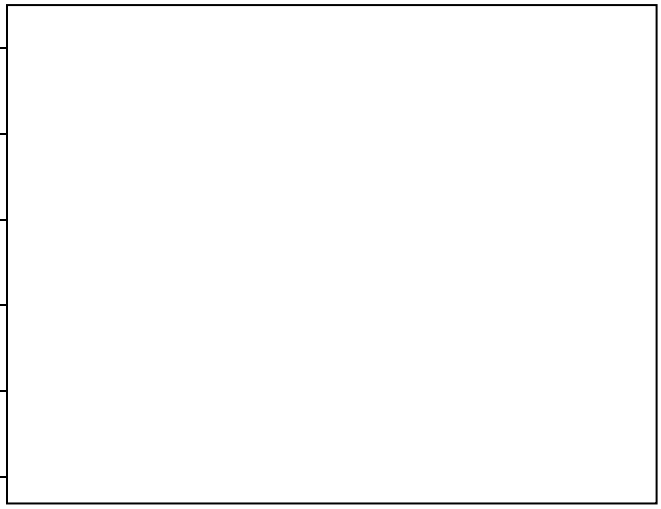
Day 4: Lesson 53 "The Moon"

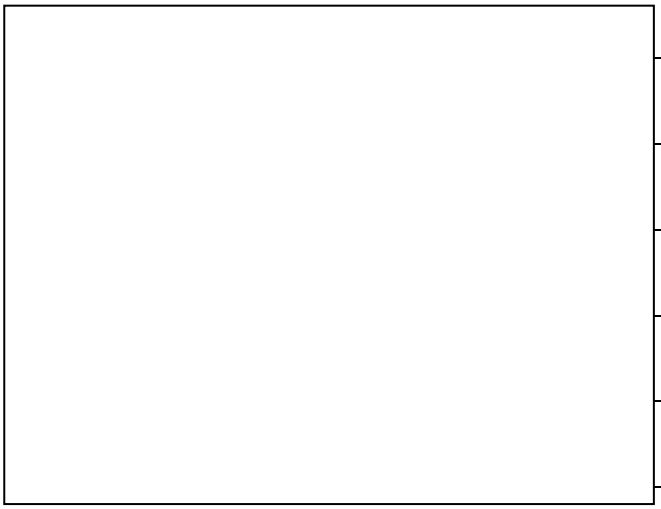
Day 4: Lesson 53

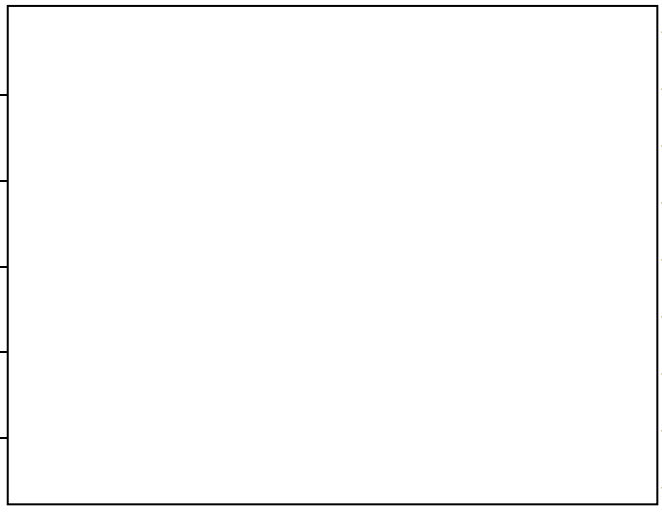
"The Moon"

Make a drawing of your experiment as if you were looking at it from above. You don't have to draw yourself, but draw the stool and the flashlight. Then draw the ball in the four positions that were described in the experiment (with your back to the flashlight, facing the flashlight, and both sides towards the flashlight.) Draw the ball as you saw it Now compare that to the drawing on page 161. For each position in your drawing, indicate the phase of the moon you were simulating.

Day 4: Lesson 54 "How Big Is It?"





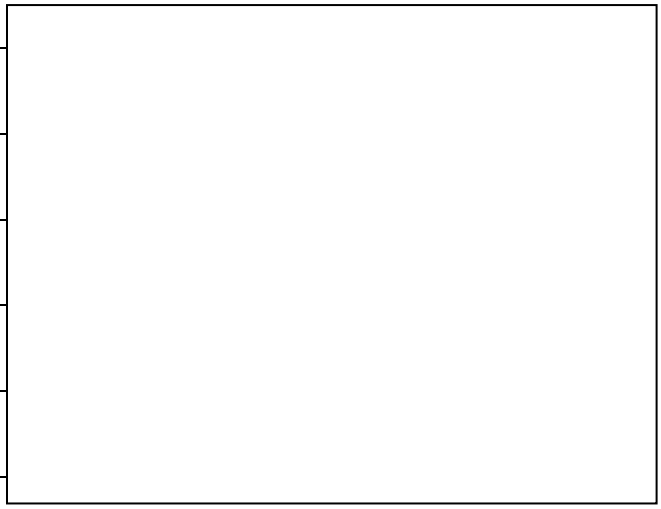


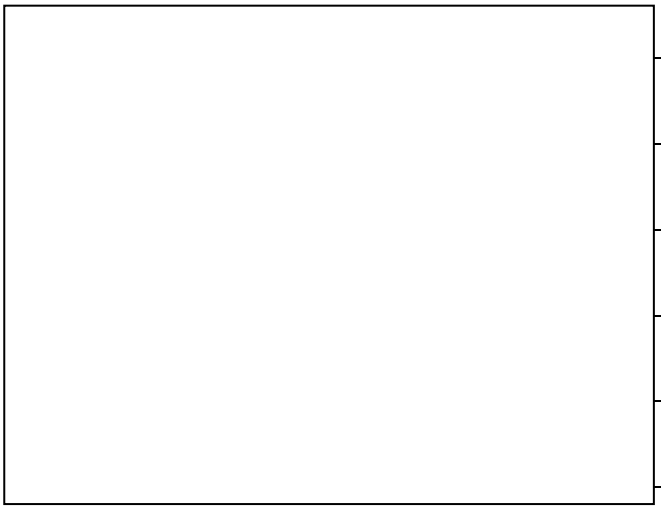
Day 4: Lesson 54

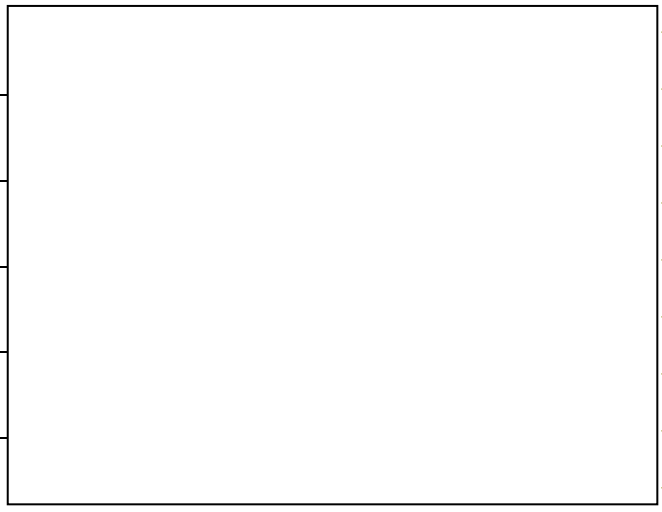
"How Big Is It?"

Why does the moon appear to be larger than the stars in the night sky, even though the stars are much larger? Explain why the moon appears larger when it is near the horizon than when it is high in the sky.

Day 4: Lesson 55"Eclipses"







Day 4: Lesson 55 "Eclipses"

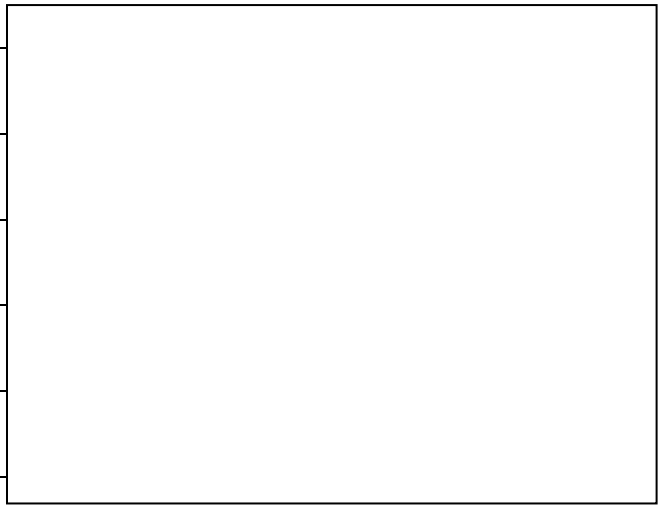
Draw a picture of how a solar eclipse happens.

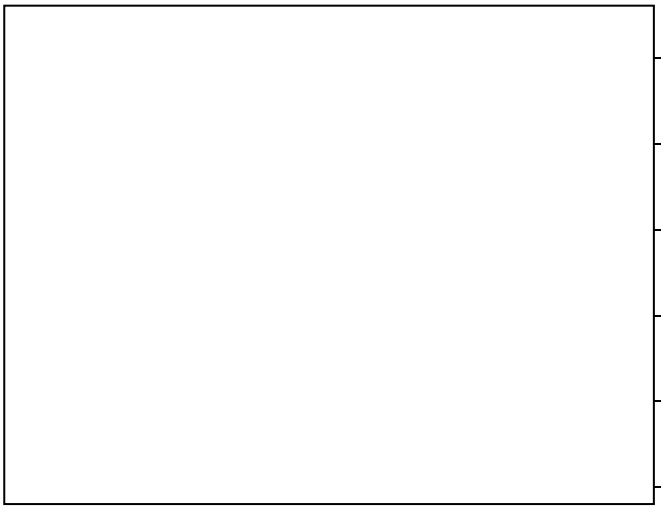
Write an explanation of the solar eclipse.

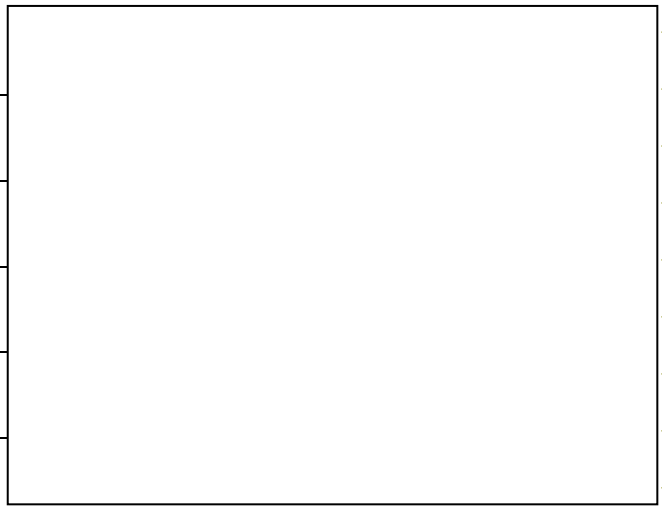
Draw a picture of how a lunar eclipse happens.

Write an explanation of the lunar eclipse.

Day 4: Lesson 56 "Apparent Brightness"



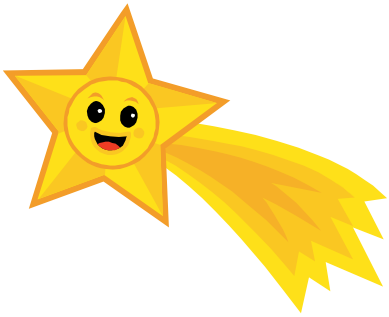




Day 4: Lesson 56

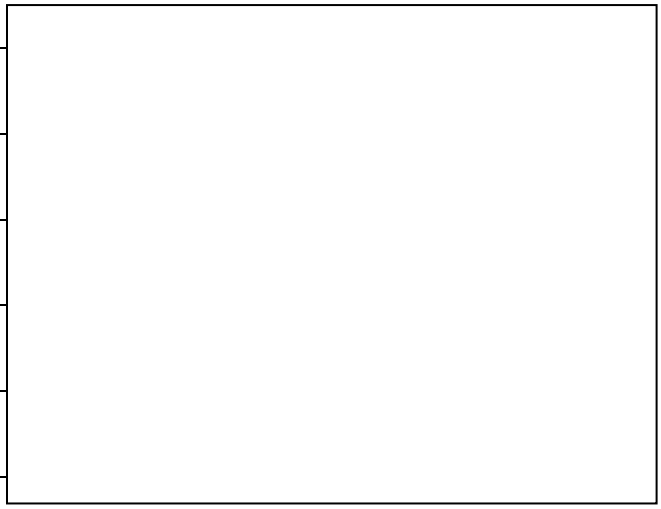
"Apparent Brightness"

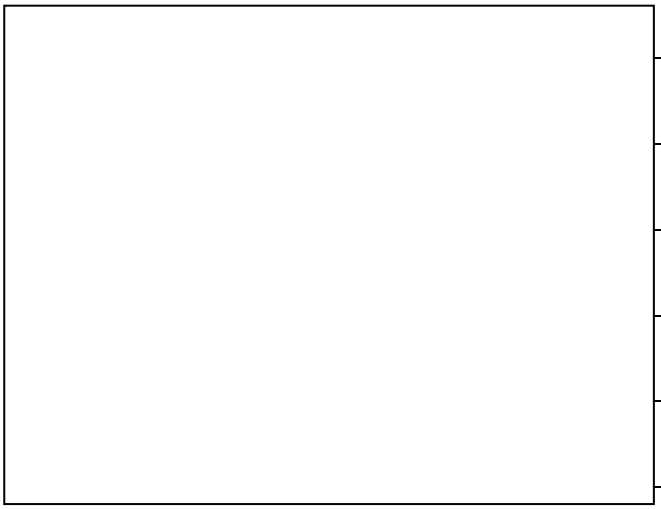
Explain how a star that burns very brightly might appear dimmer in the night sky than a star that doesn't burn nearly as brightly.

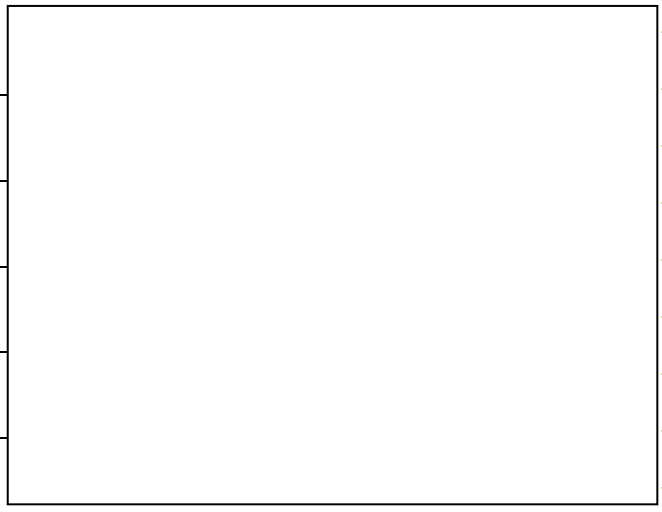


Also, explain why the sun appears so large compared to the other stars in the night sky, even though it is smaller than most of them.

Day 4: Lesson 57 "Where Do the Stars Go During the Day? "







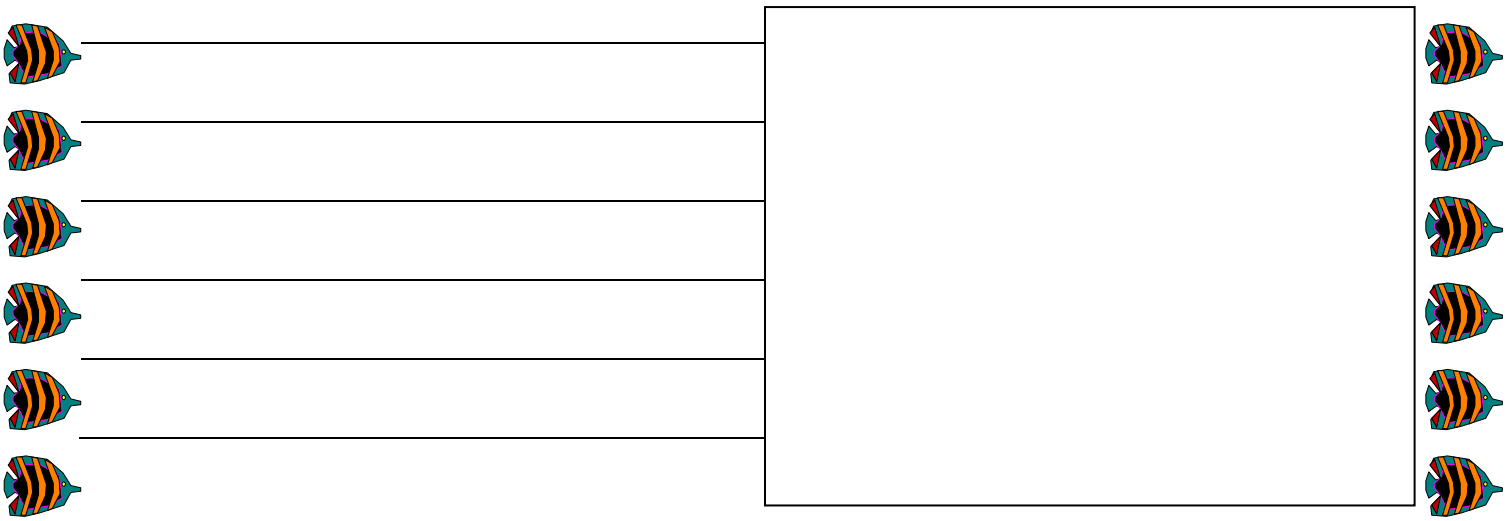
Day 4: Lesson 57

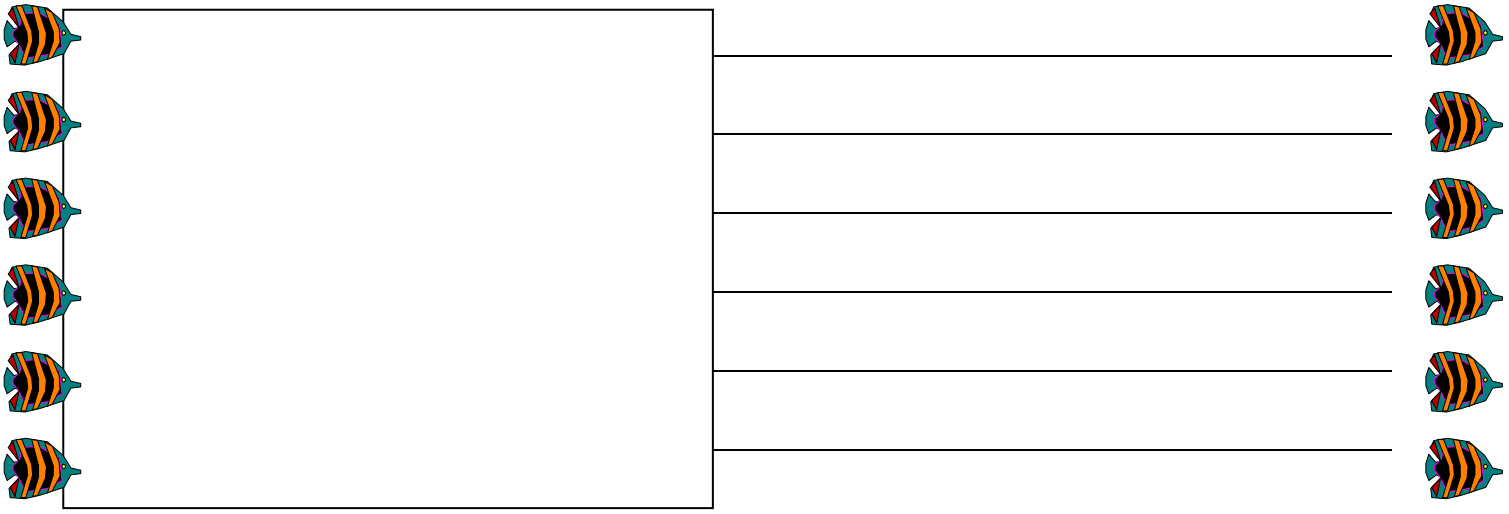
"Where Do the Stars Go During the Day?"

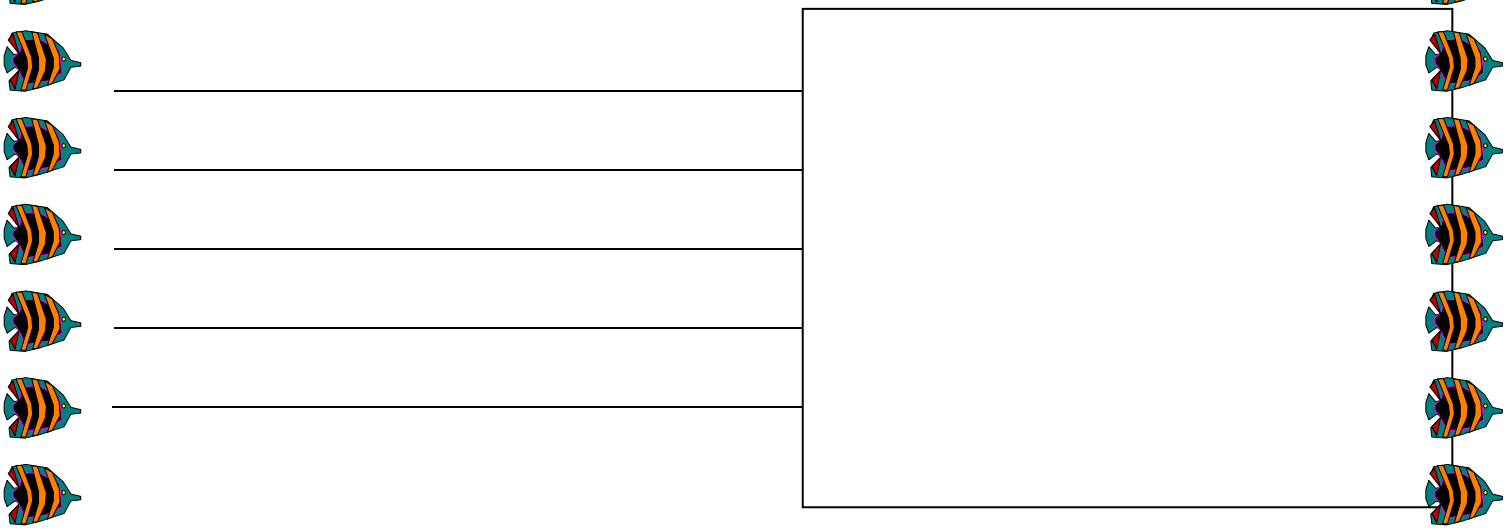
Explain why you don't see stars during the day. Also, explain what light pollution is and how it makes studying the stars and planets difficult.

Day 5: Swimmers and Flyers

Day 5: Lesson 61 "Classification"

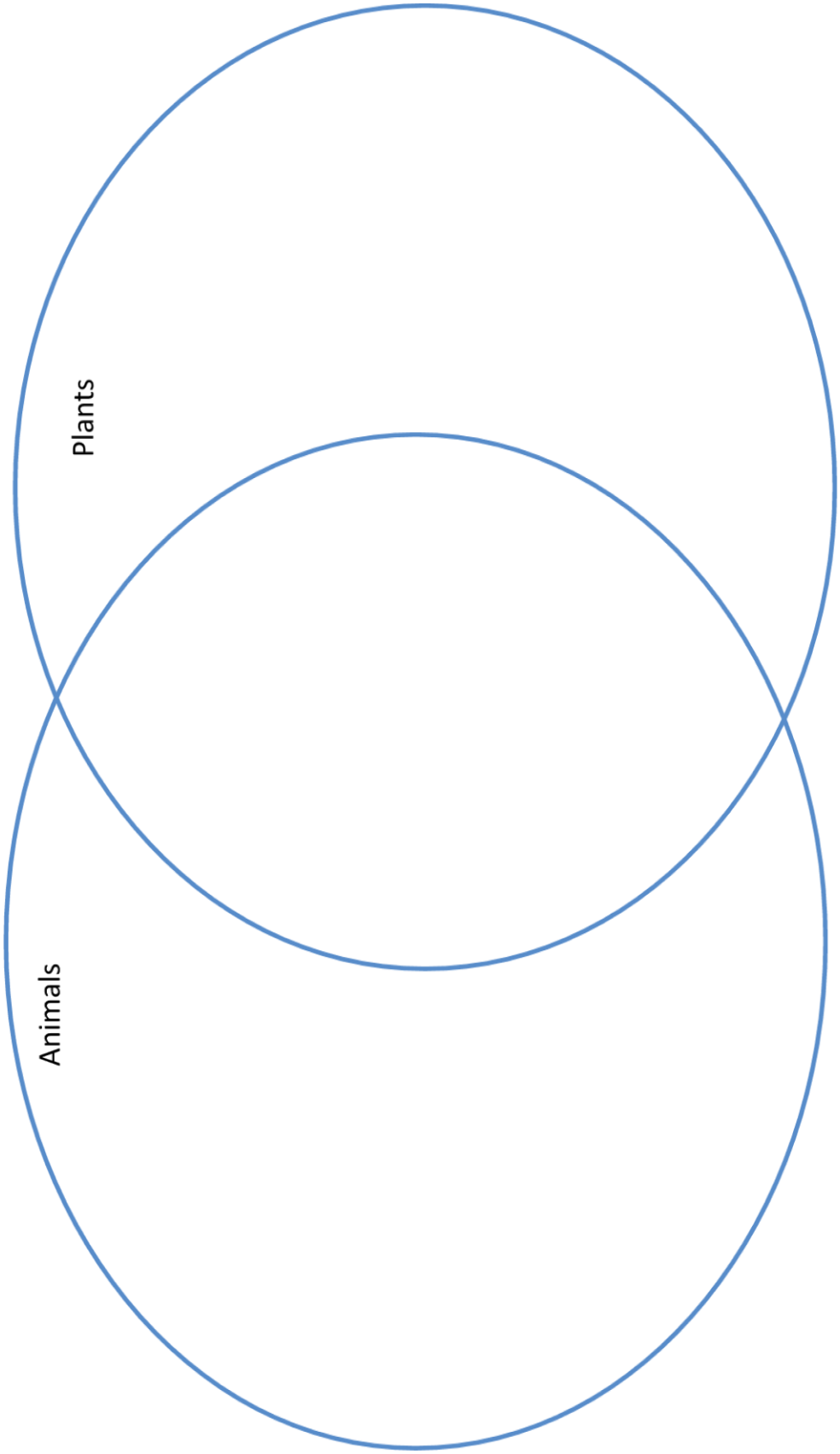






Day 5: Lesson 61

Venn Diagram



Day 5: Lesson 61 – continued

"Classification"

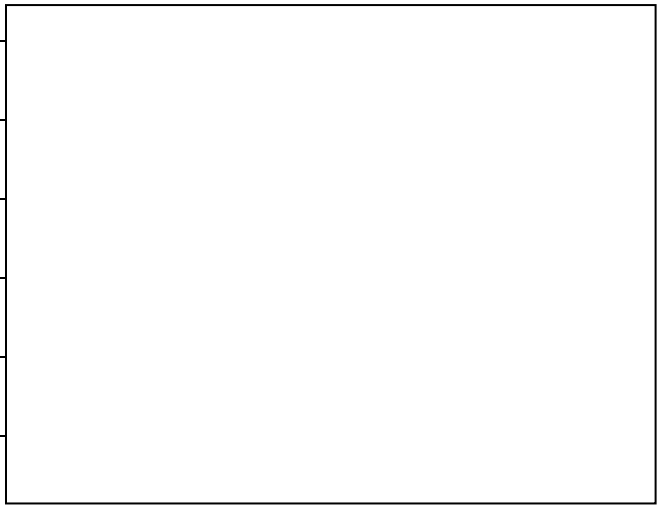
Get some magazines or newspapers your parents will allow you to cut up, and find pictures of at least five plants and five animals. Make sure the pictures have the characteristics that are in your Venn diagram (most plants are green, and animals can move, for example). Alternatively, you can print out pictures from the internet. Paste your plant pictures below. Paste the animal pictures on the next page.

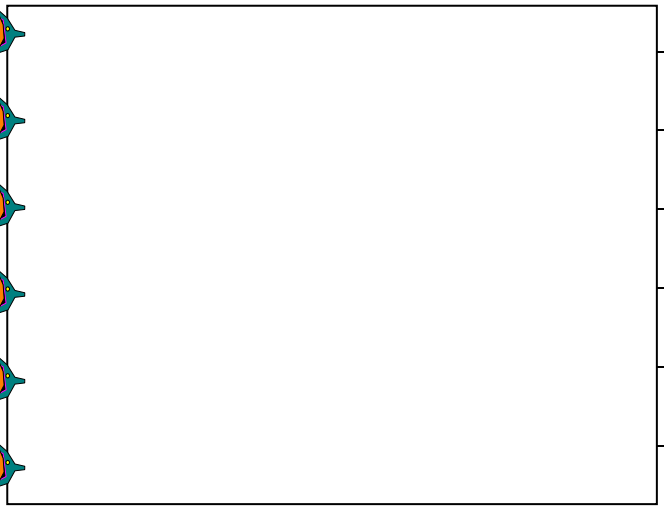
Plants

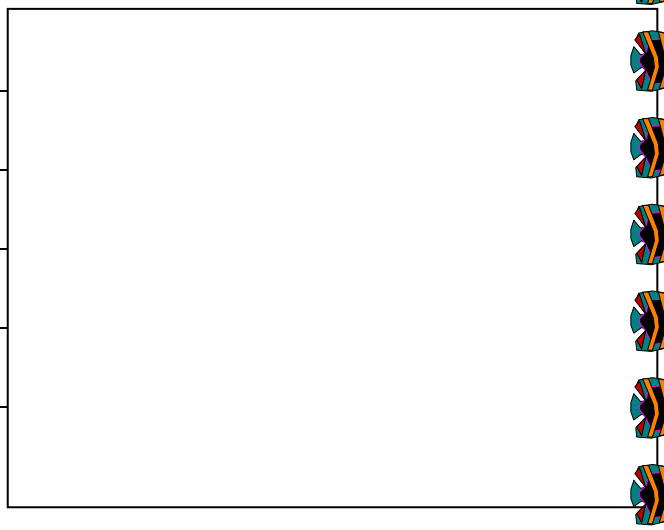
Day 5: Lesson 61 – continued

Animals

Day 5: Lesson 62 "Saltwater and Freshwater"







Day 5: Lesson 62

"Saltwater and Freshwater"

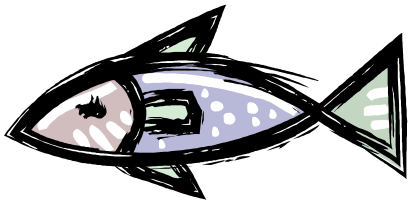
Make a drawing of a fish in water.

Draw what would happen if that fish were a freshwater fish and did not urinate a lot. Underneath, explain why what you drew would happen.

Day 5: Lesson 62 – continued

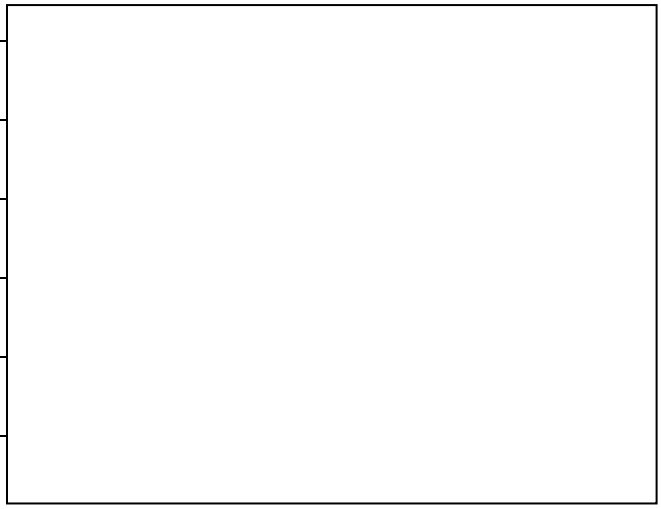
"Saltwater and Freshwater"

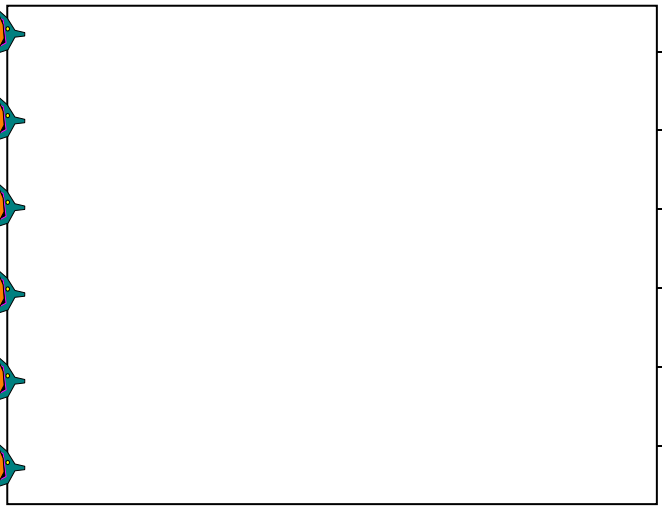
Draw what would happen if that fish were a saltwater fish and did not drink a lot. Underneath the drawing, explain why what you drew would happen.

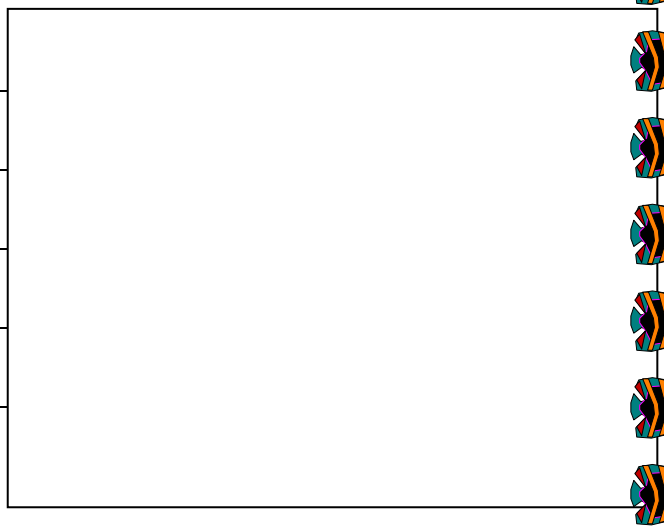


Explain why what you drew on the previous page would happen

Day 5: Lesson 63 "Osmosis and Diffusion"







Day 5: Lesson 63

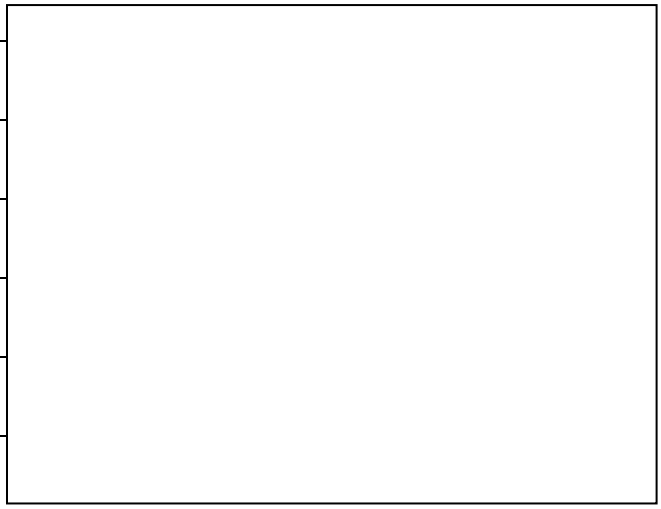
"Osmosis and Diffusion"

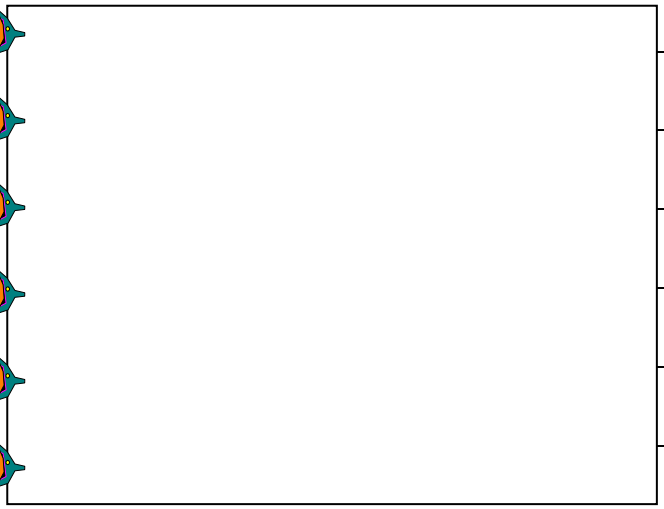
1. Where do solutes tend to go - toward areas that have a lot of solute and only a little solvent, or towards areas where there is a lot of solvent and only a little solute

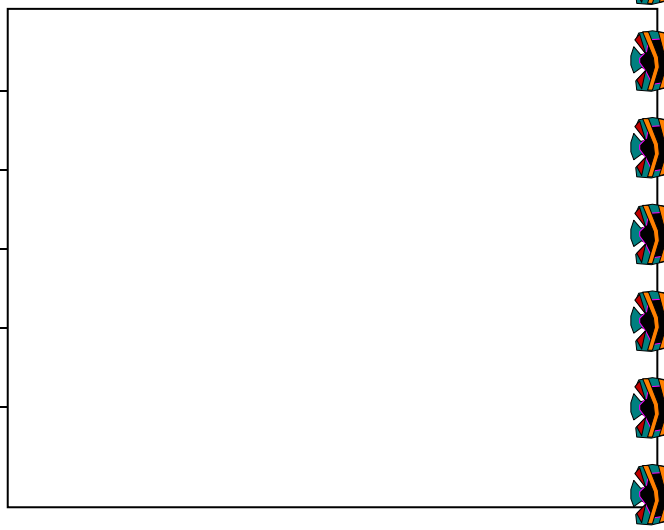
2. What do we call the structures a fish uses to breathe underwater? _____

Explain how a jellyfish gets oxygen and how a fish gets oxygen. Explain why every animal that is underwater its entire life needs at least some part of it that is covered with a membrane that is in contact with the water and allows oxygen to pass through it. (Hit: Use the word "diffusion" in your explanations.)

Day 5: Lesson 64 "Vertebrates and Invertebrates"







Day 5: Lesson 64

"Vertebrates and Invertebrates"

1. What are the two basic kinds of animals? _____

2. What is the difference between those two kinds of animals?

_____

_____

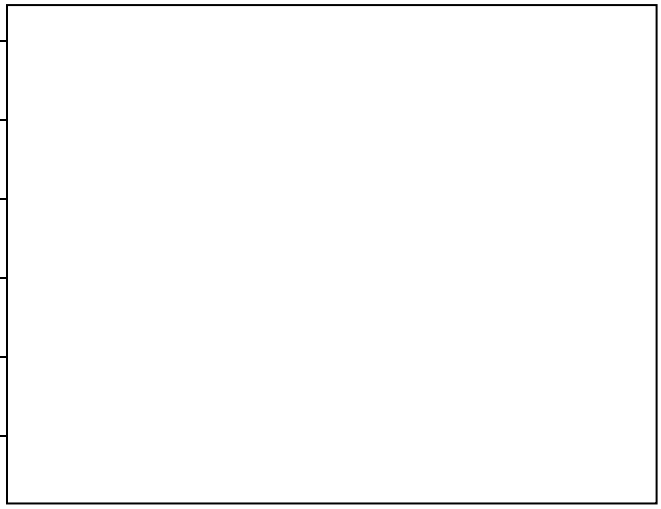
_____

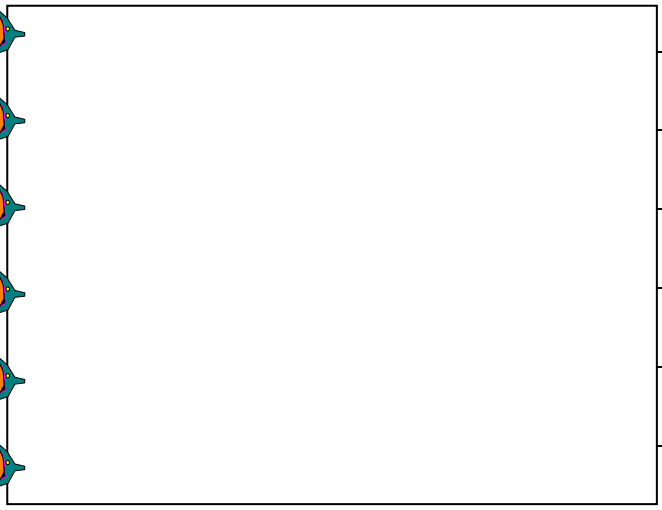
_____

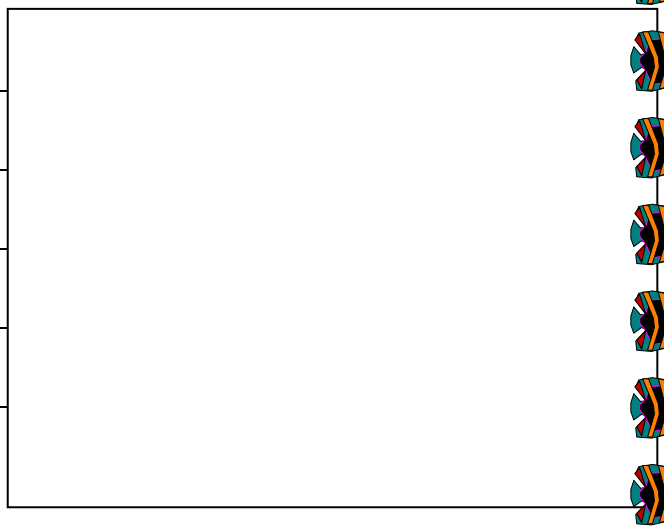
_____

Look through some books, magazines, or the Internet to find a few examples of marine or freshwater vertebrates and invertebrates. For each animal, either paste a picture below, or draw a picture of it, and label it as either an invertebrate or a vertebrate.

Day 5: Lesson 65 "Some Ways that Invertebrates Move in Water"





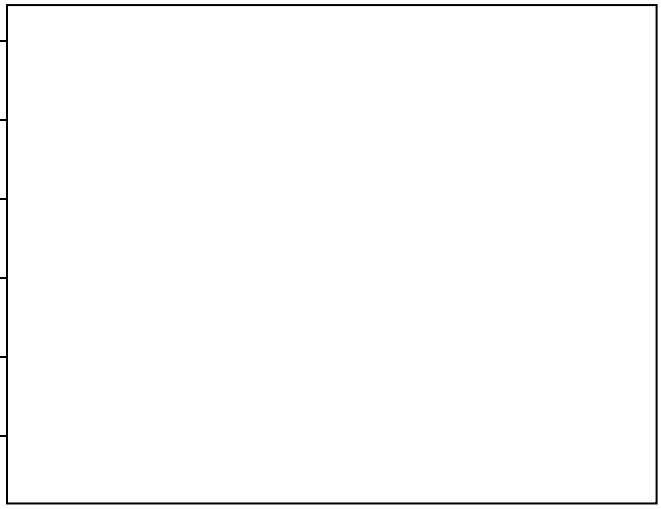


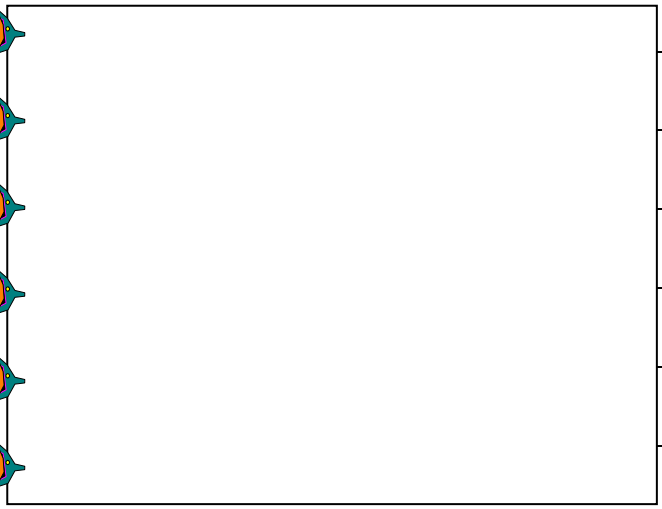
Day 5: Lesson 65

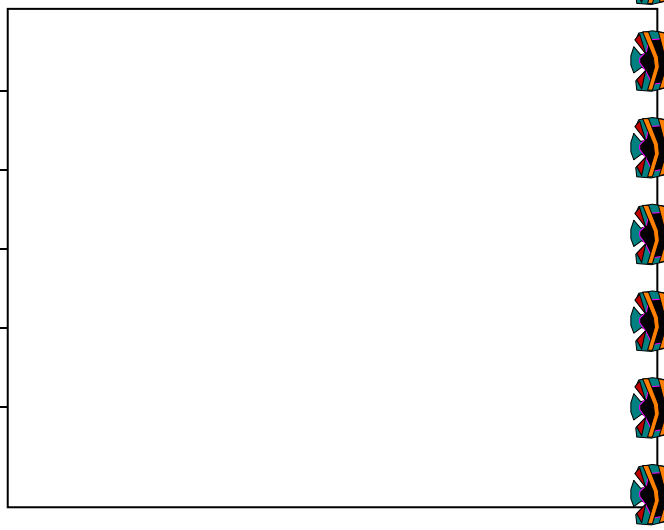
"Some Ways that Invertebrates Move in the Water"

Write an imaginary conversation between a clam and an octopus. They should tell each other how they move and what the like about how they move. They should talk about what they have in common when it comes to movement and what is different between them.

Day 5: Lesson 66 "How Most Vertebrates Move in the Water"







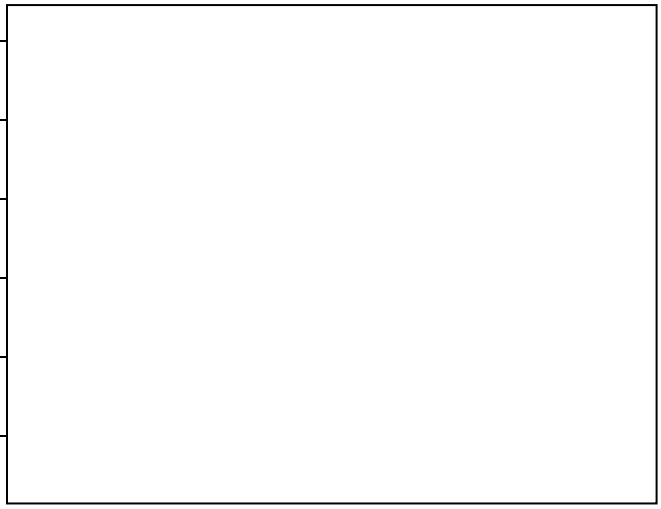
Day 5: Lesson 66

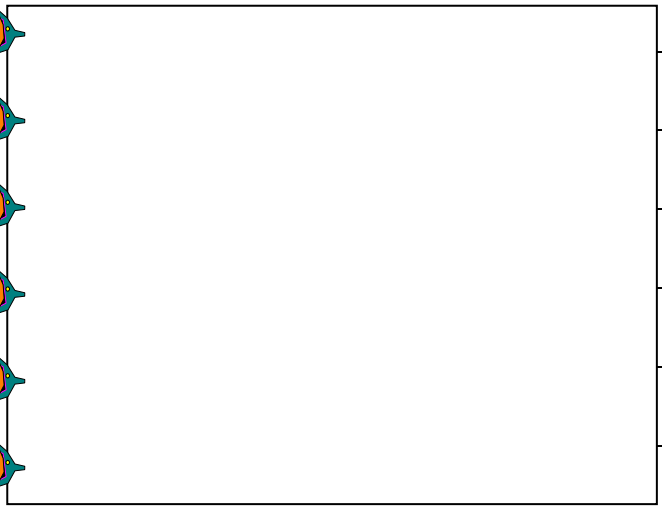
"How Most Vertebrates Move in the Water"

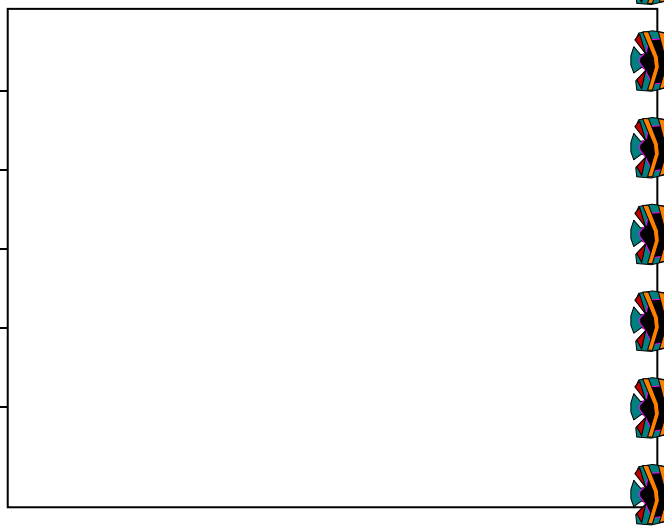
Draw a picture of a fish, labeling the fins. (Use the picture on page 200 as a guide.)

Describe the main job for each type of fin. Also, explain how a fish uses its swim bladder to control its depth.

Day 5: Lesson 67 "From the Water to the Air"







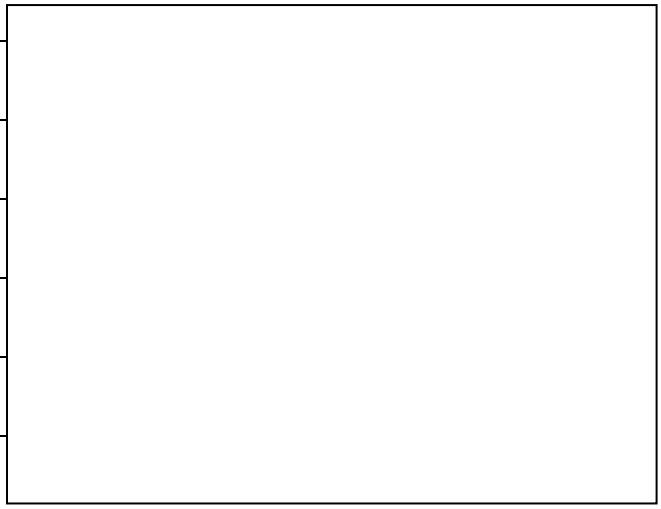
Day 5: Lesson 67

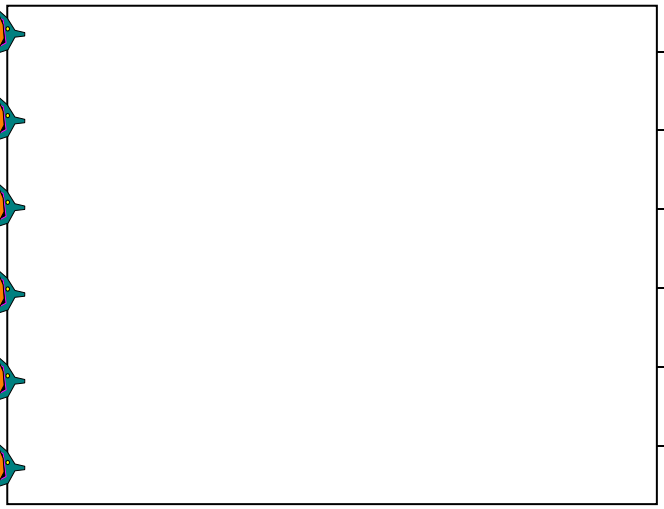
"From the Water to the Air"

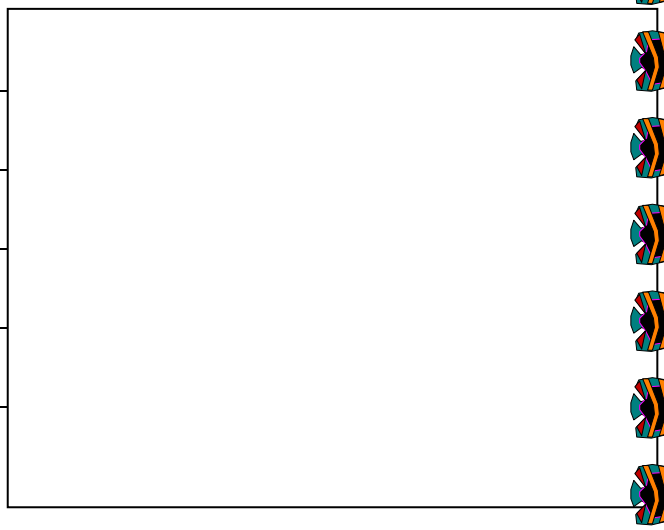
Draw a feather in the box below. Label the shaft, quill, vane, and barbs in your drawing.

Explain how the barbs connect to each other to make the vane, and explain why the shaft is hollow.

Day 5: Lesson 68 "Waterproofing Feathers"





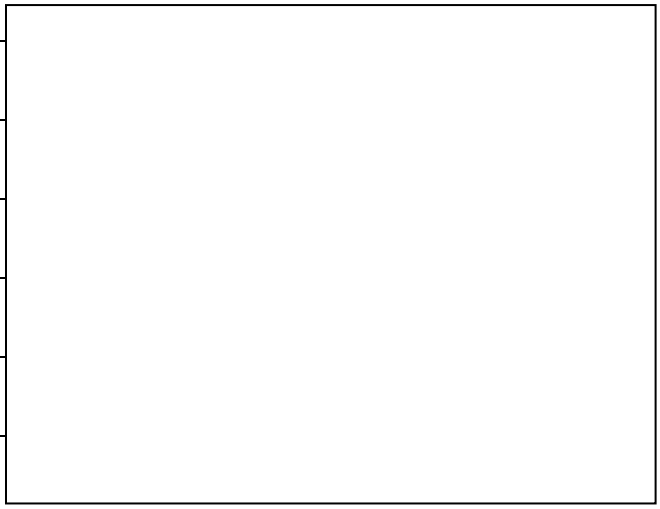


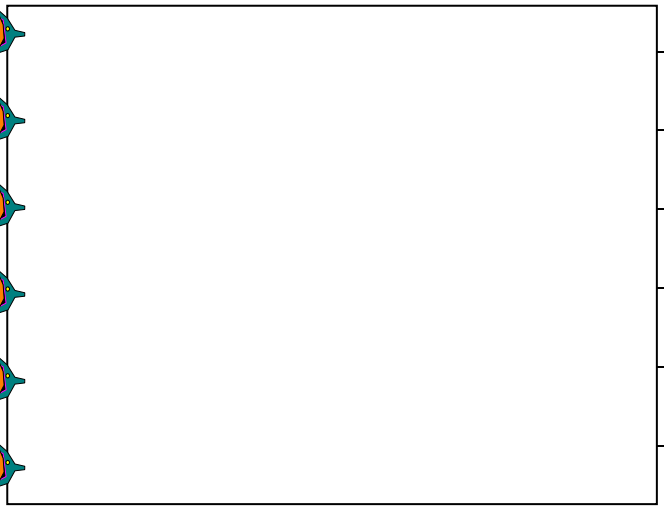
Day 5: Lesson 68

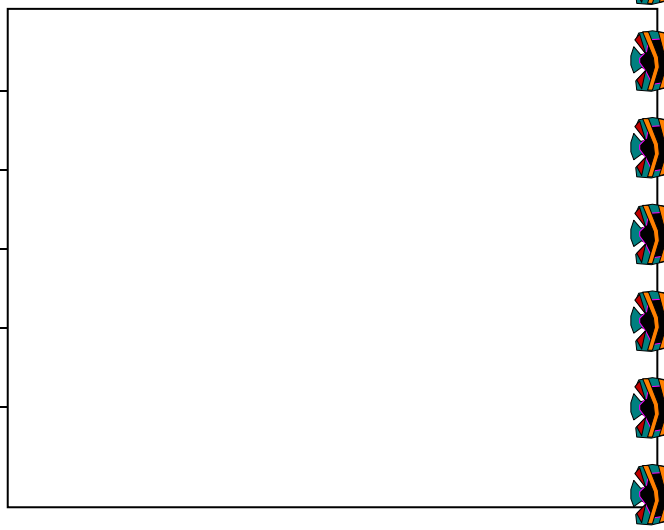
"Waterproofing Feathers"

Write a description of how a bird waterproofs its feathers. Be sure to include an explanation as to why oil and water don't mix. In addition, explain why waterproof feathers are important for most birds, but especially for waterfowl.

Day 5: Lesson 69 "The Basics of Flight"







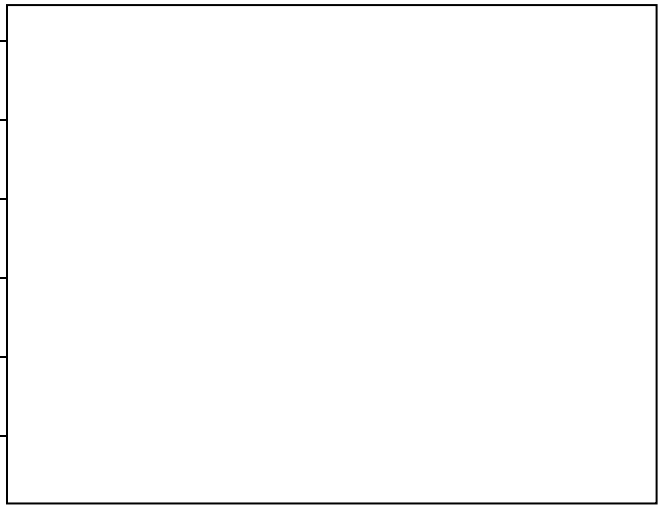
Day 5: Lesson 69

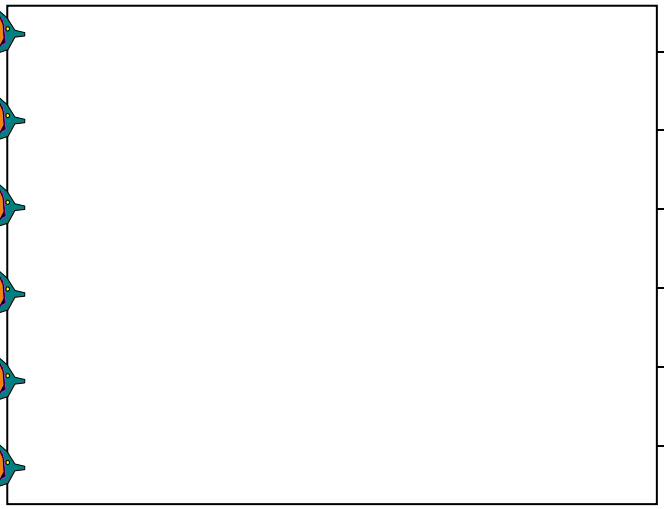
"The Basics of Flight"

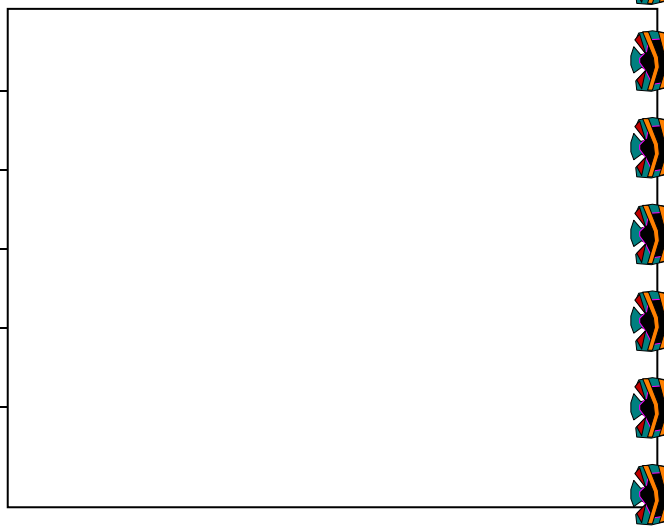
Make a drawing like the one on page 211. However, rather than using arrows, use dots to represent air. The more dots you draw, the more air pressure exists in that region.

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

Day 5: Lesson 70 "Takeof and Thrust"







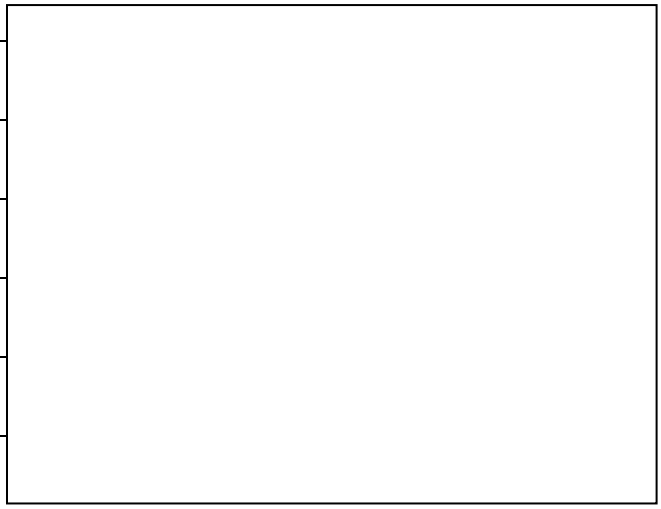
Day 5: Lesson 70

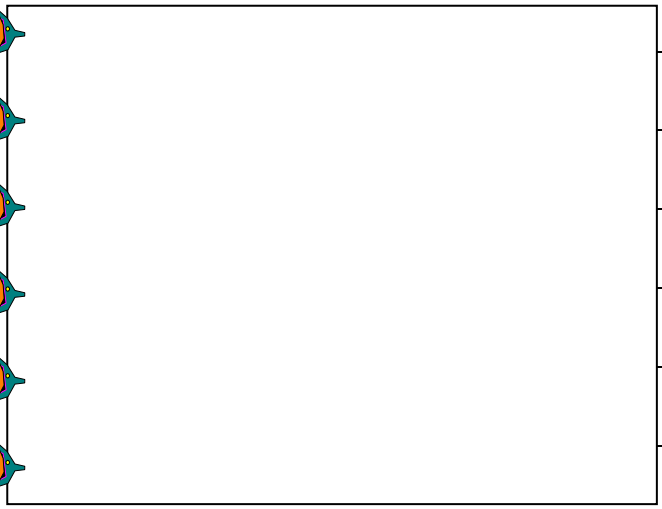
"Takeoff and Thrust"

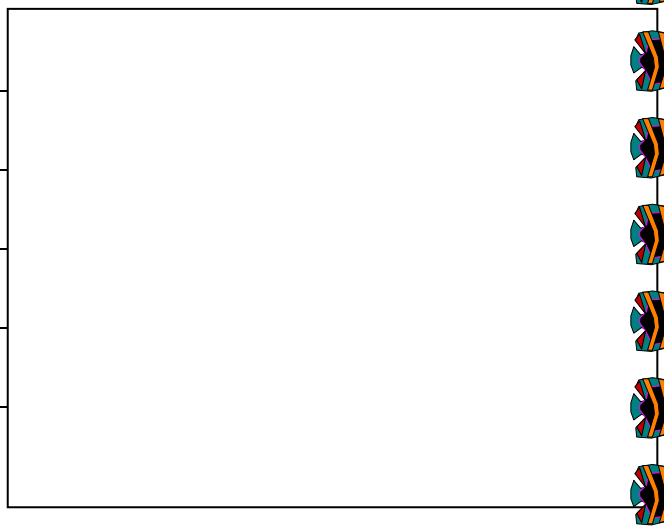
Make a drawing similar to the one you made in the previous lesson. This time, however, make a drawing of a bird's wing as it is being flapped downwards. Use dots to show where there is more air and where there is little air.

Explain how this gives the bird thrust, and why the bird brings its wings closer to its body when it flaps them upwards.

Day 5: Lesson 71 "Designed for Flight, Part 1"







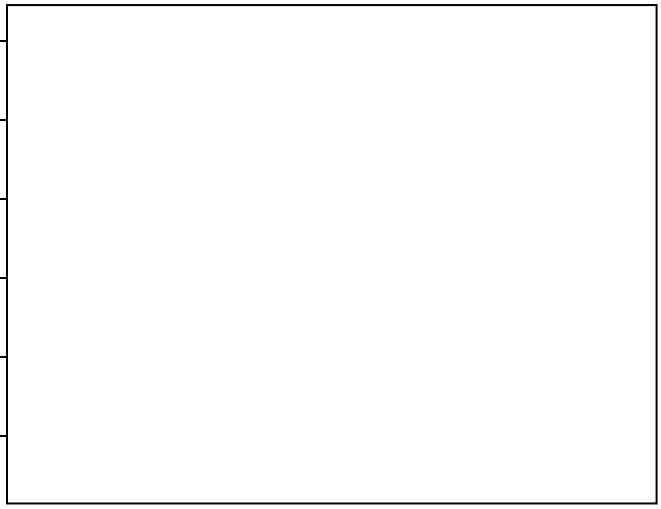
Day 5: Lesson 71

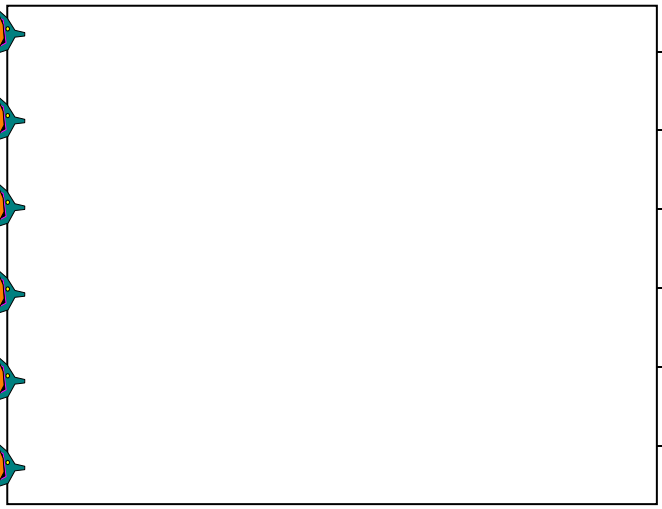
"Designed for Flight, Part 1"

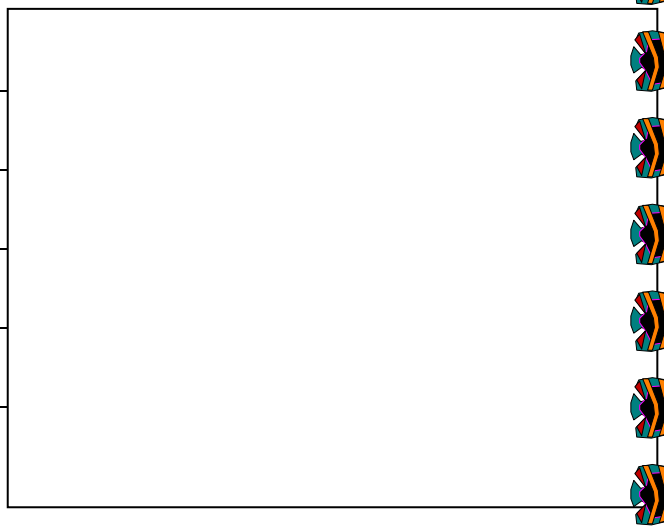
Find a picture of an airplane and glue it in the space below. Compare it to the picture of the Royal Tern on page 216.

Ignore the big wings at the center and the smaller wings on the tails. Those are necessary for flying and steering. Just concentrate on the body shape. Explain why an airplane has the same basic body shape as a bird. (Hint: use the word "streamlined" in your answer.)

Day 5: Lesson 2 "Designed for Flight, Part II"







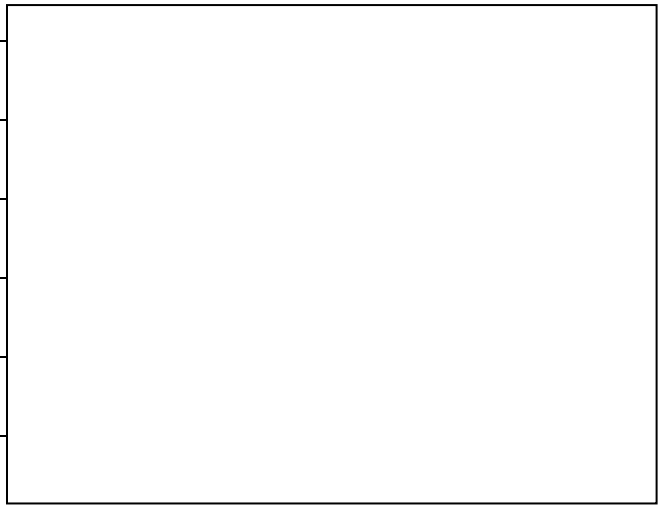
Day 5: Lesson 72

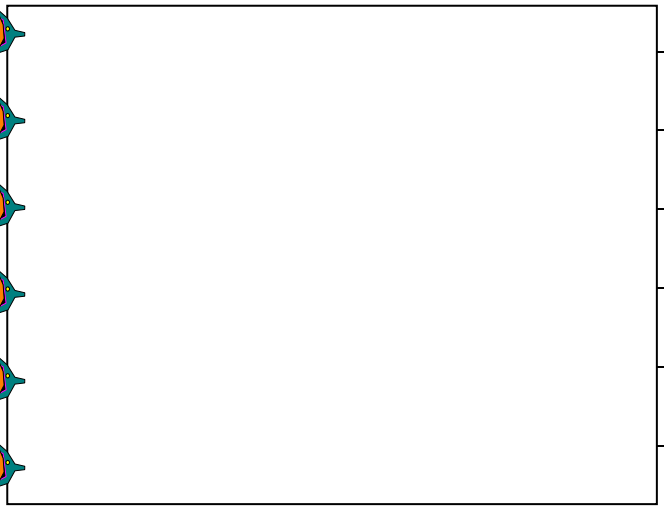
"Designed for Flight, Part II"

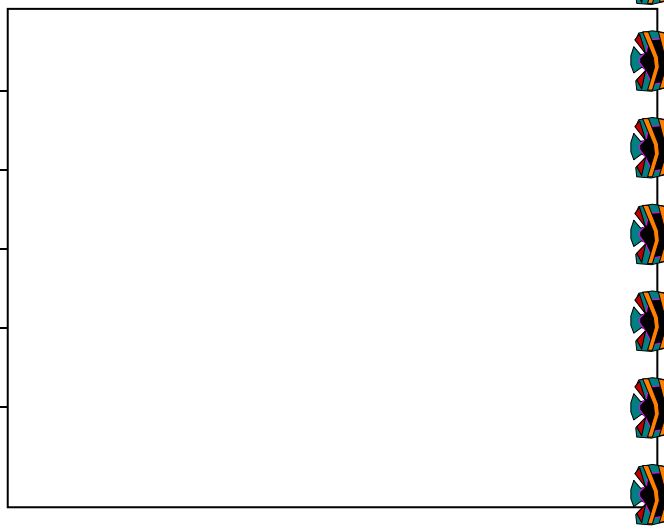
A student is given two bones. One comes from a bird, and another comes from a cat. What should the student do to determine which came from which?

Explain why birds have mostly hollow bones.

Day 5: Lesson 73 "Other Bird Design Features"







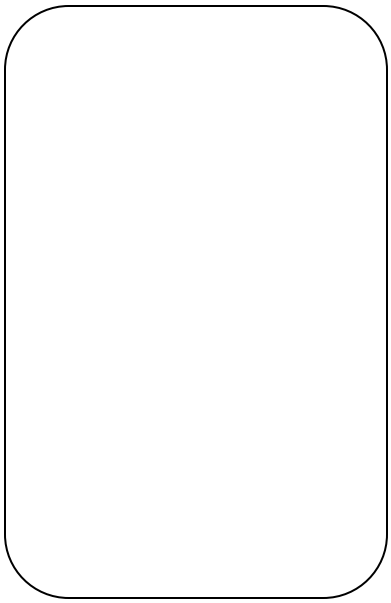
Day 5: Lesson 73

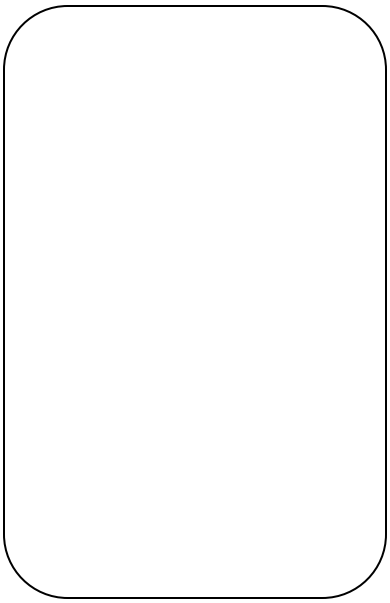
"Other Bird Design Features"

Draw pictures (or find pictures on the Internet or from magazines) of the five kinds of bills you studied in this lesson. For each type of bill, describe how it tells you what the bird eats.

Day 5: Lesson 73 - Continued

"Other Bird Design Features"



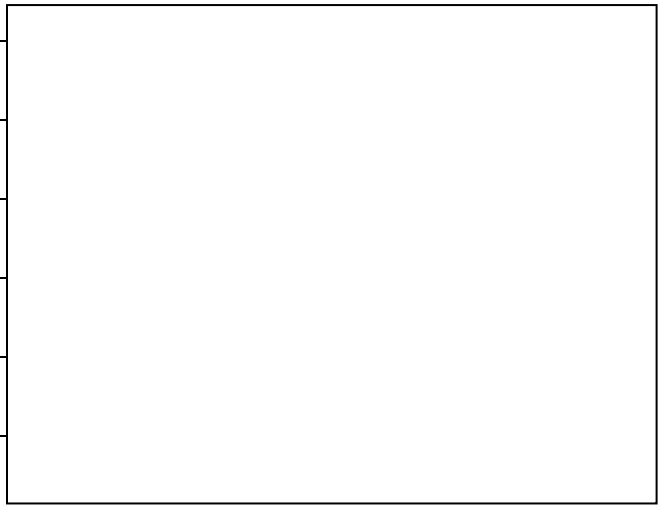


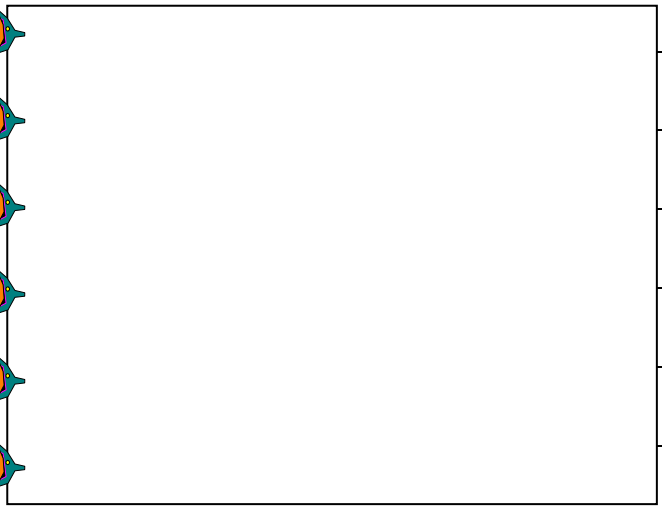
Day 5: Lesson 73 - Continued

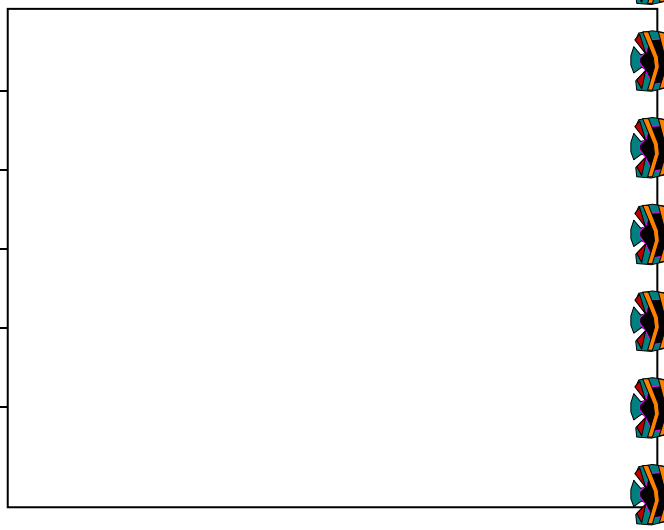
"Other Bird Design Features"

Write down your own explanation of what the word "bill" means and what the word "beak" means.

Day 5: Lesson 74 "Eggs"







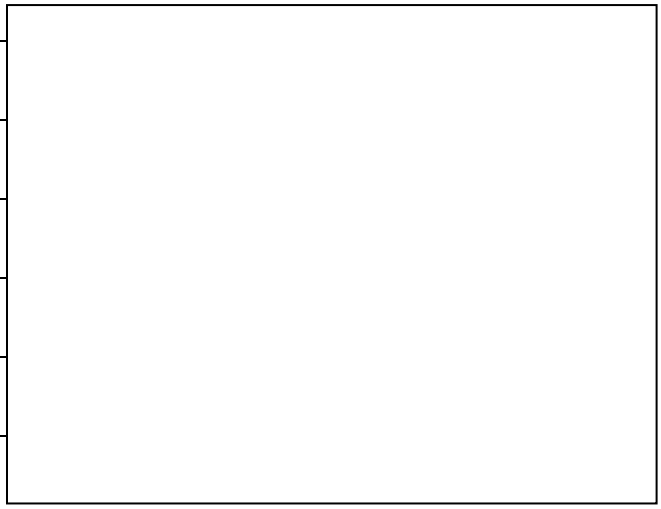
Day 5: Lesson 74

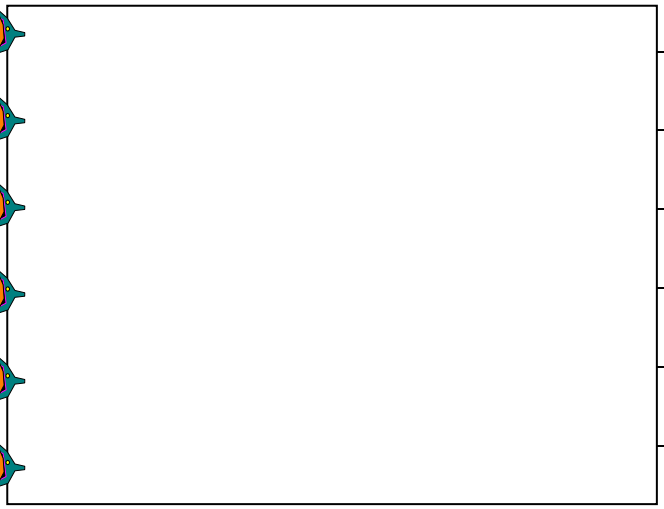
"Eggs"

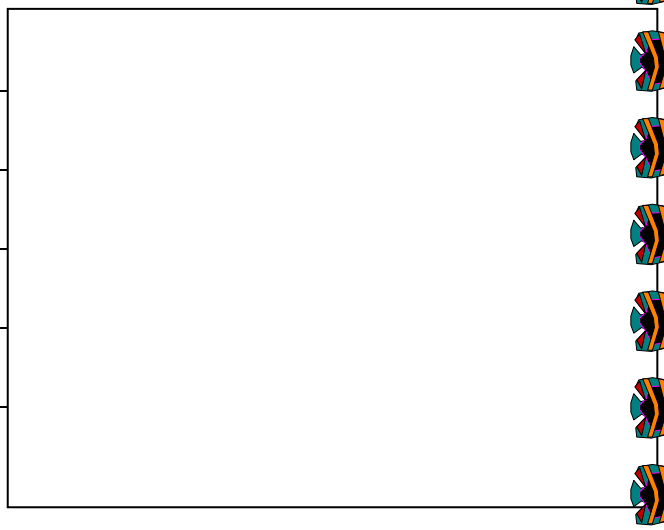
Draw an illustration of the egg half that you saved. Label all the parts you learned about in the experiment.

Explain what each part of the egg does. (Throw the egg half away once you are done.)

Day 5: Lesson 75 "Hatching Eggs"







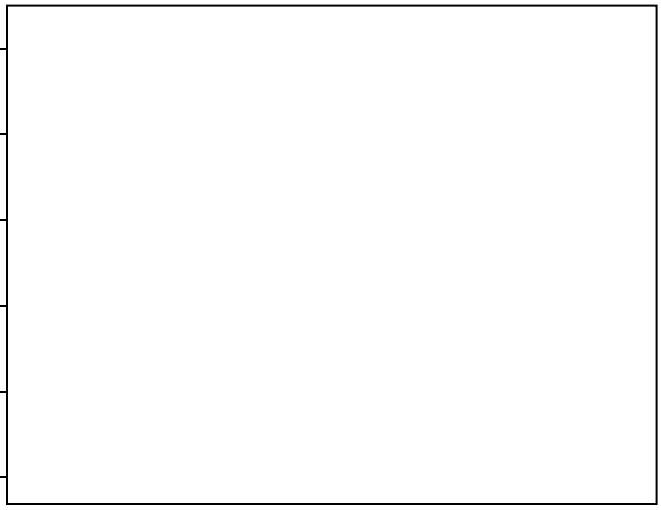
Day 5: Lesson 75

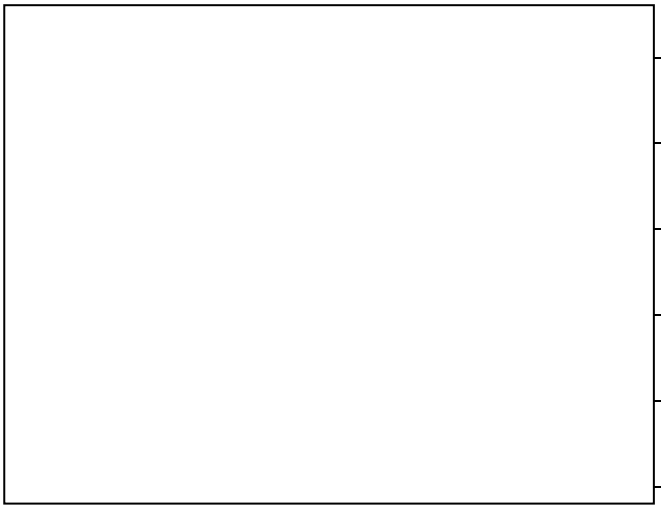
"Hatching Eggs"

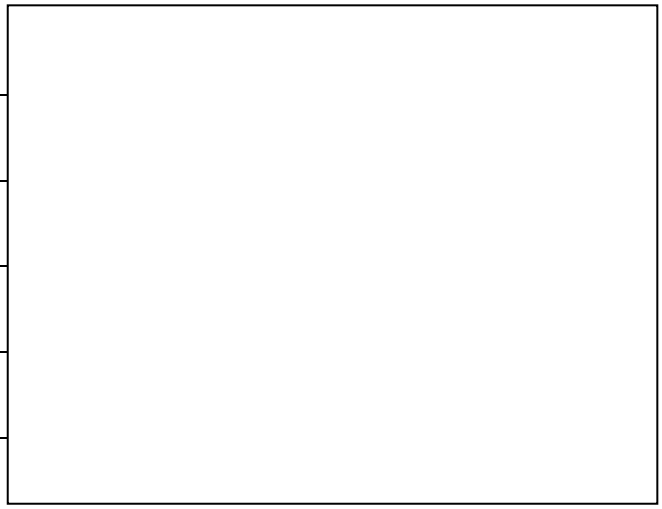
Describe the experiment you did, and write why this helps to explain how an egg doesn't break when its parent sits on it to incubate it. Also, discuss how a baby bird might be precocial or altricial, and explain what those terms mean.

Day 6:
Land, Animals and People

Day 6: Lesson 76 "Land Animals and People"







Day 6: Lesson 76

"Land Animals and People"

Find pictures of domesticated animals and paste them below:

Explain what a domesticated animal is and what the Bible probably means when it talks about God creating cattle on the sixth day.

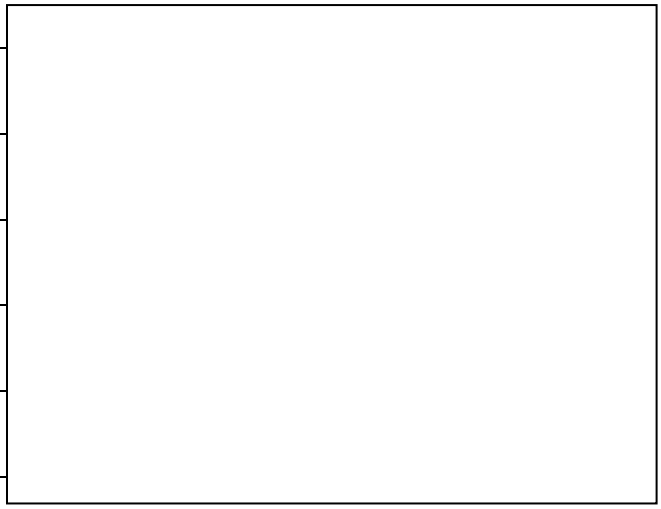
Day 6: Lesson 76 - continued

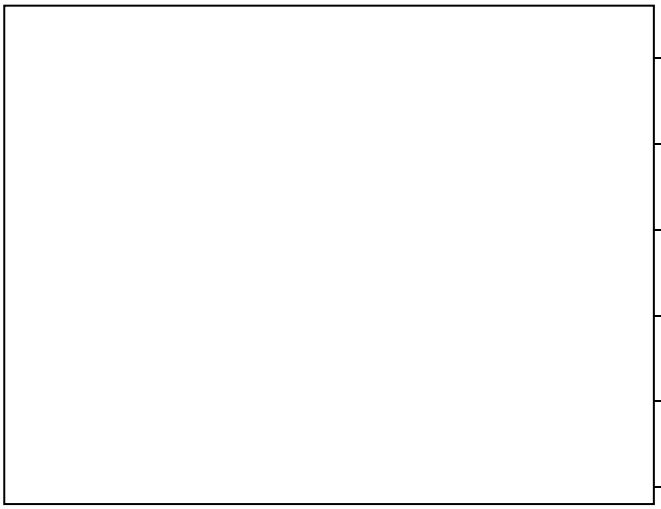
Paste pictures of creeping things below.

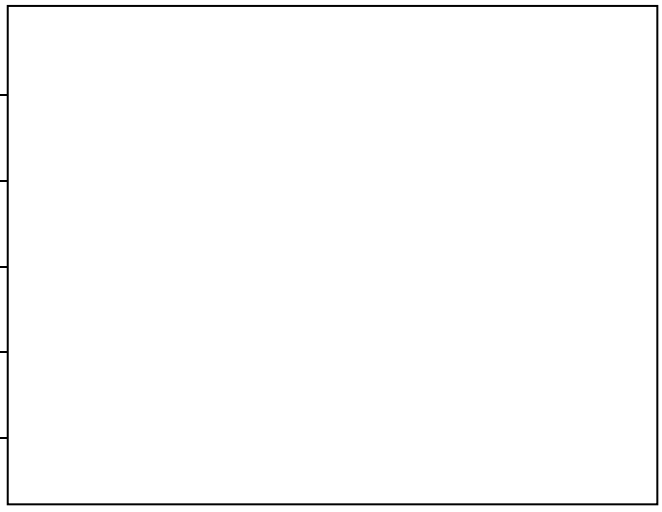
Day 6: Lesson 76 - continued

Paste pictures of wild animals that live on the land below.

Day 6: Lesson 77 "Legs"







Day 6: Lesson 77
"Legs"

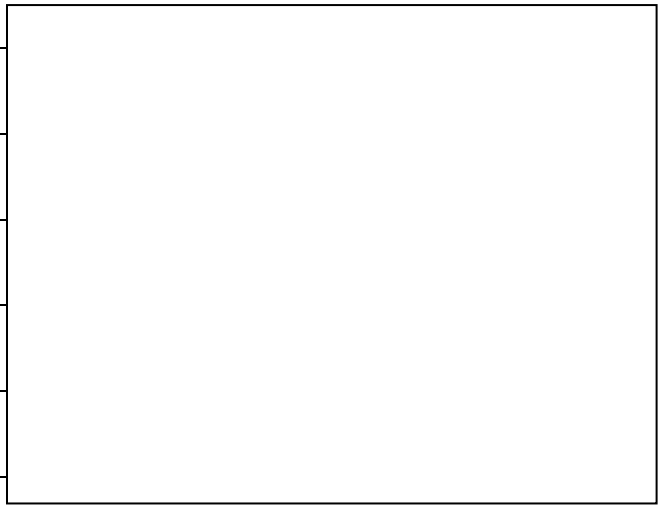
Make a drawing of an insect. Indicate the legs and antennae.

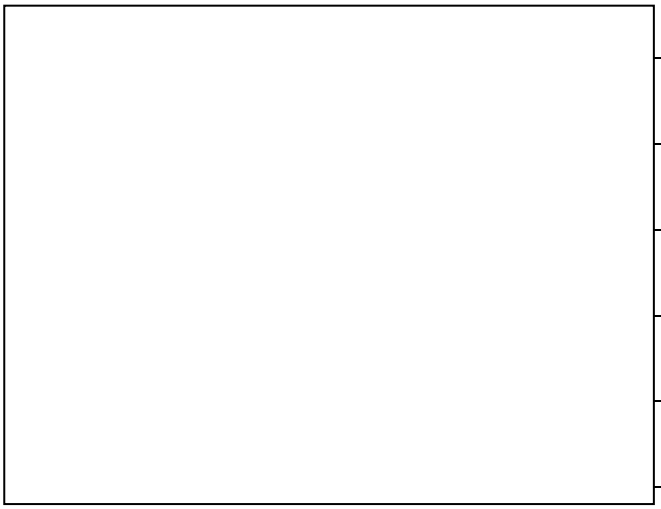
All insects have 6 legs.

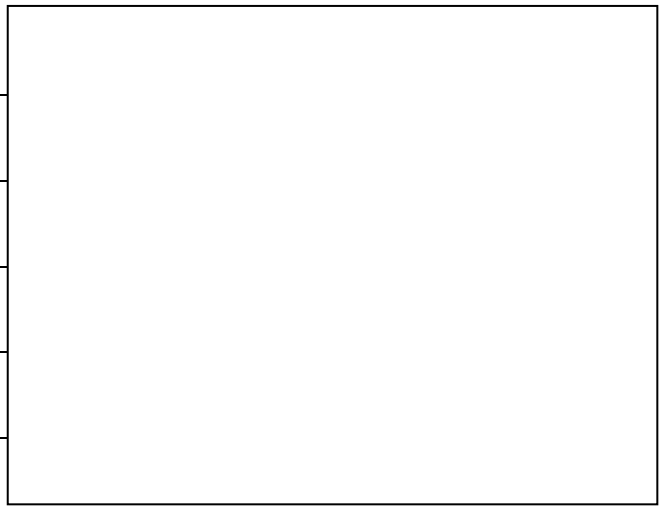
Draw a spider.

How can you tell that a spider is not an insect?

Day 6: Lesson 78 "No Legs"





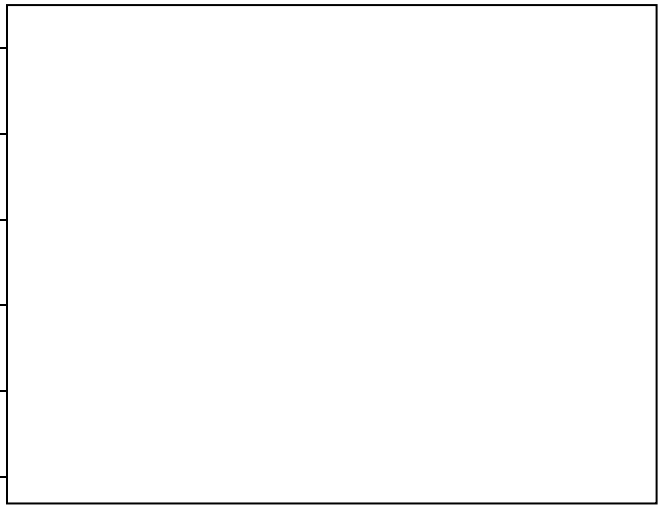


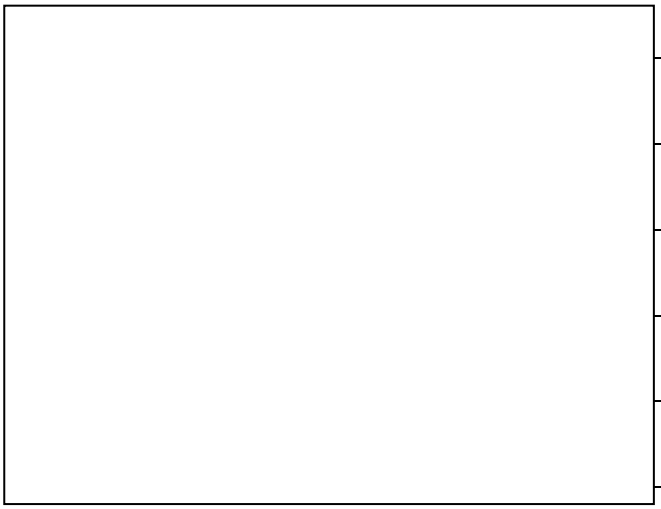
Day 6: Lesson 78
"No Legs"

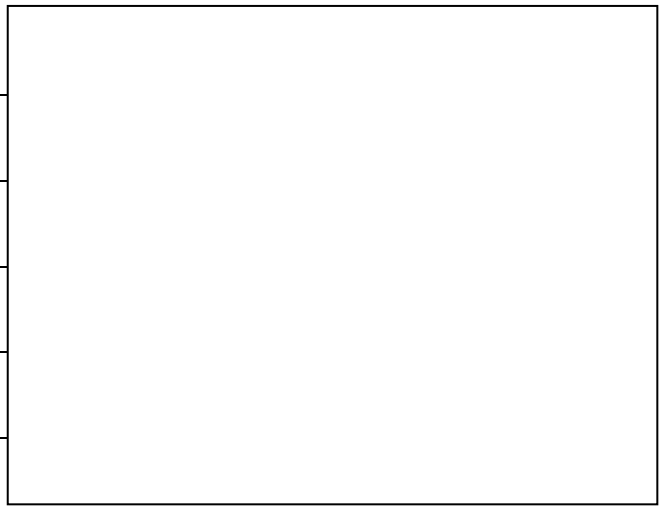
Make a drawing of an earthworm crawling along the ground. Show the clitellum, and point out the anterior end, the posterior end, the dorsal side, and the ventral side.

Explain an earthworm's method of locomotion.

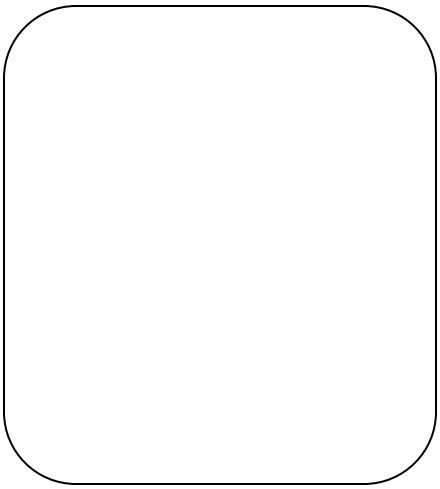
Day 6: Lesson 79 "Land Vertebrates"



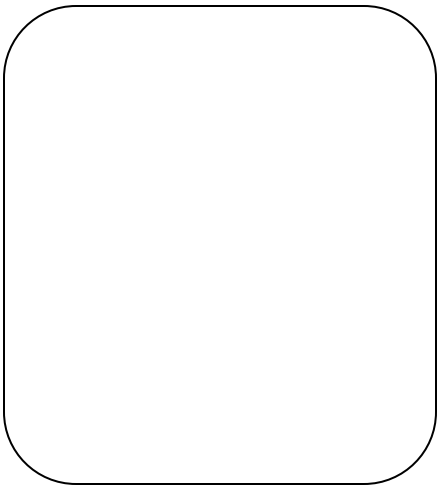




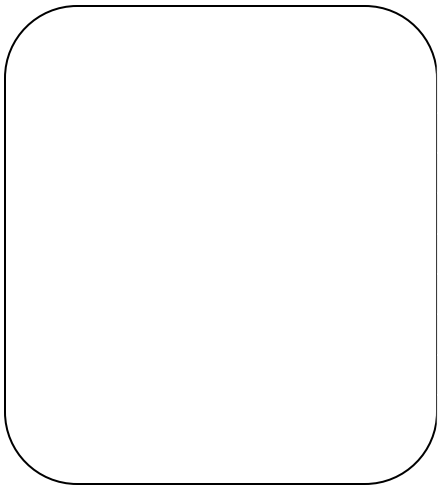
Day 6: Lesson 79
"Land Vertebrates"



Amphibian



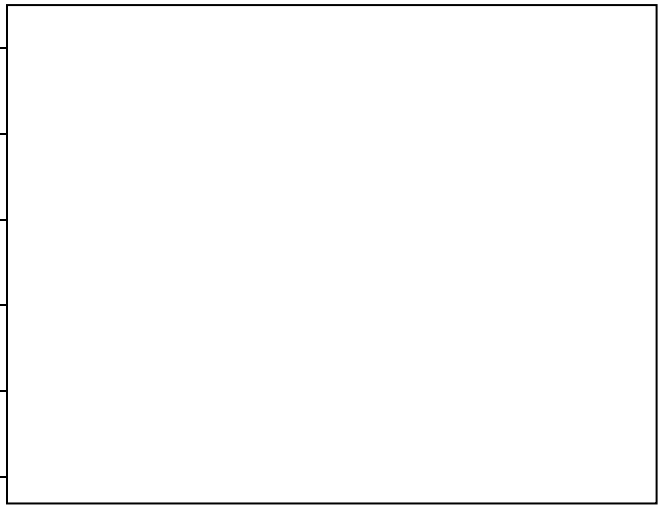
Reptile

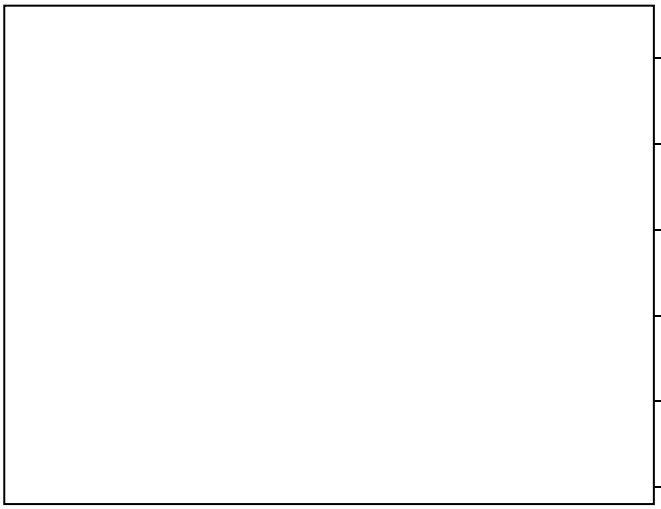


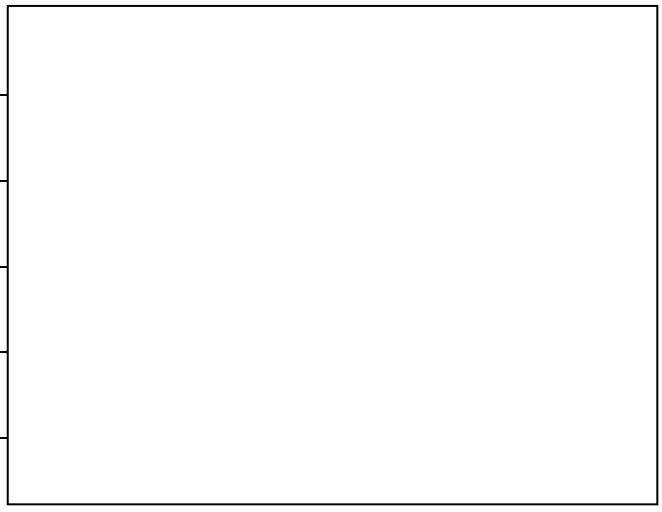
Mammal

Explain what each type of animal is covered in and why. Also, indicated whether each type of animal is warm- or cold-blooded.

Day 6: Lesson 80 "More on Insulation"



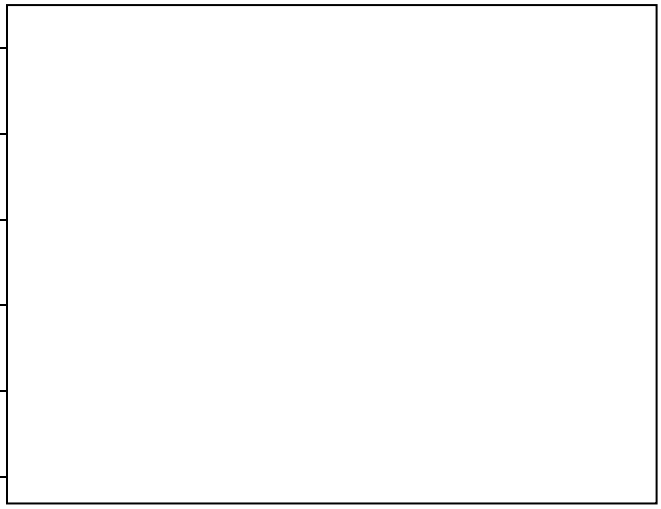


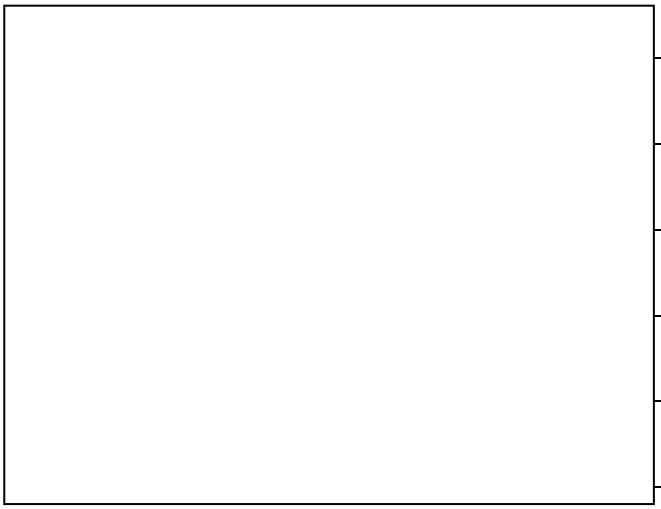


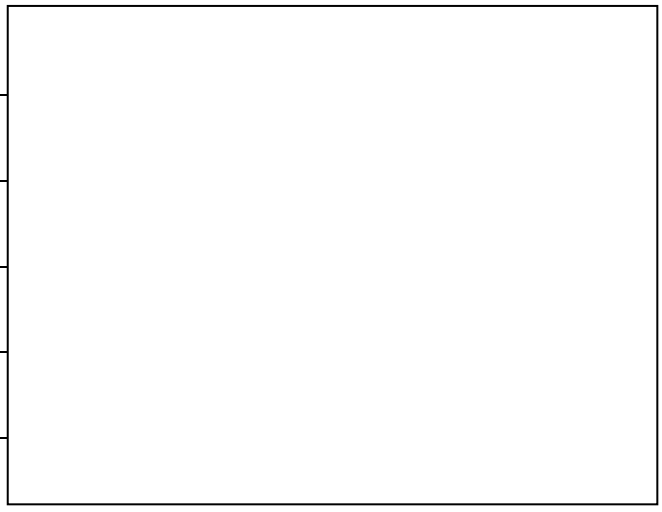
Day 6: Lesson 80
"More on Insulation"

Write down what you did in your experiment and why the experiment demonstrates that fat is a good insulator. Also, explain why the fat didn't dissolve away into the water when you put your shortening-covered fingers into it. Explain how fat is used by animals besides insulation.

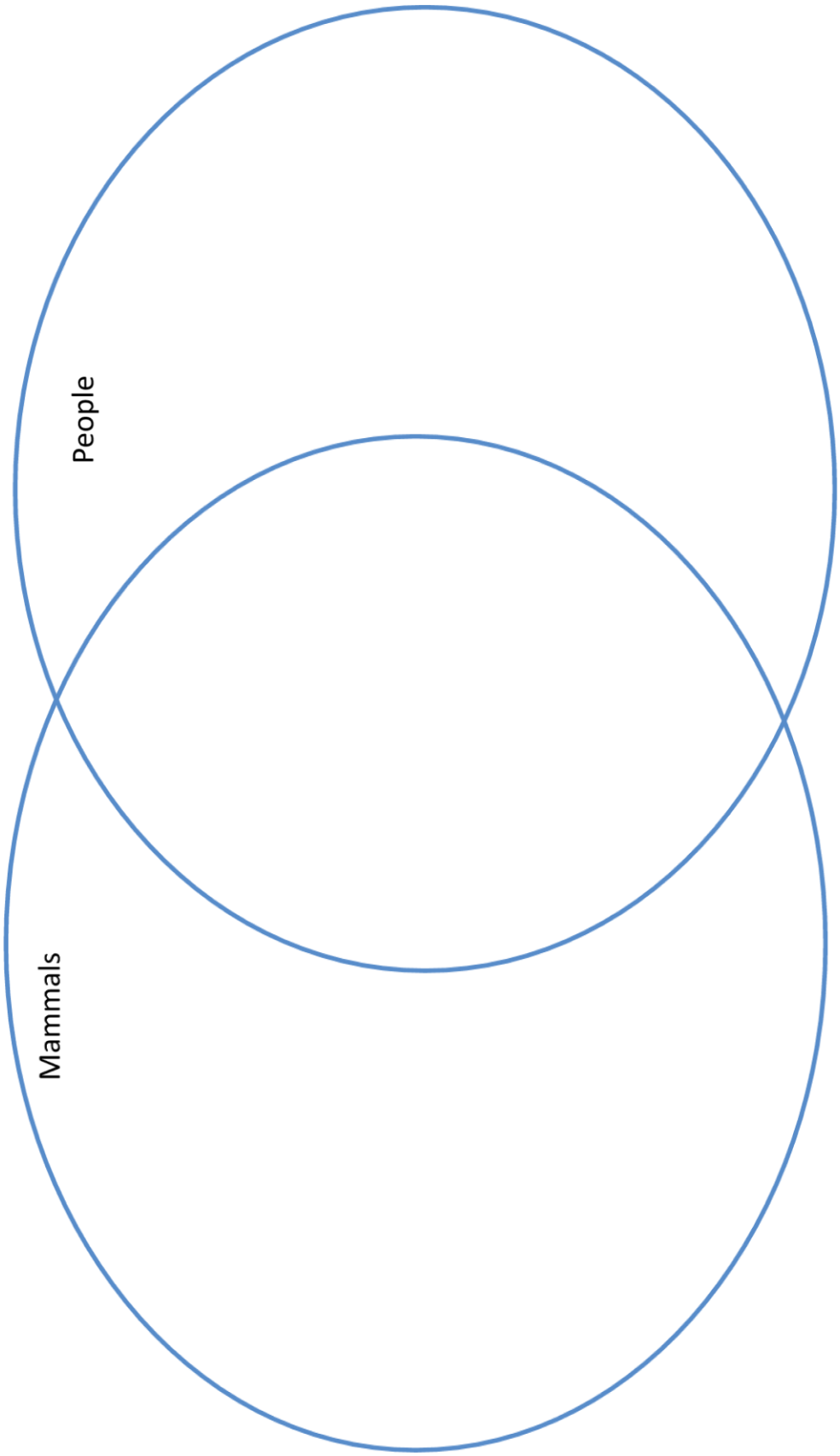
Day 6: Lesson 81 "People"



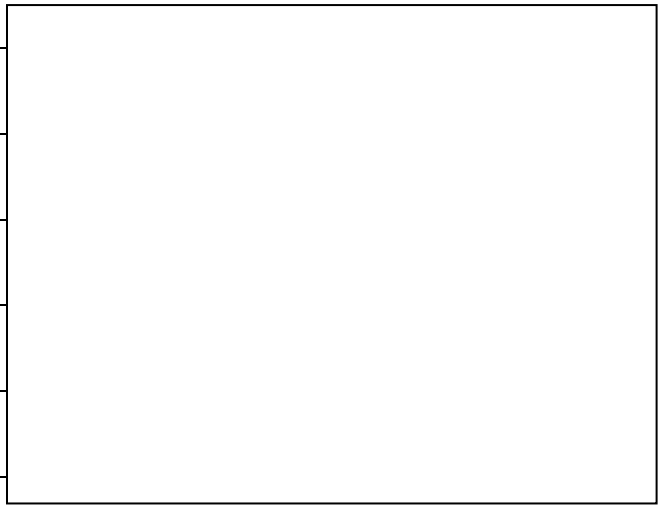


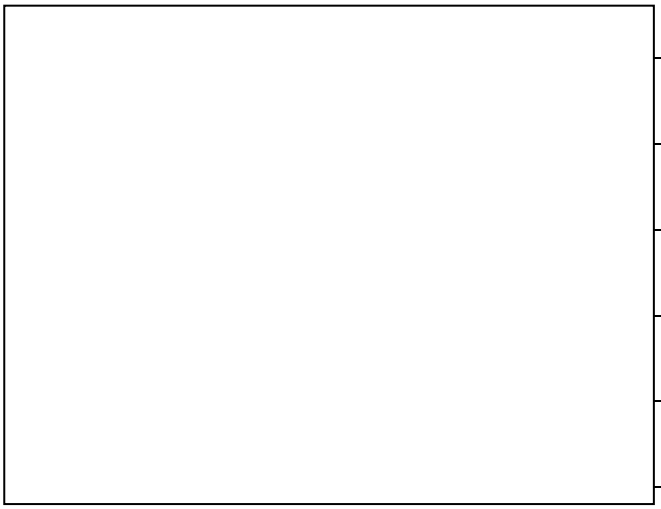


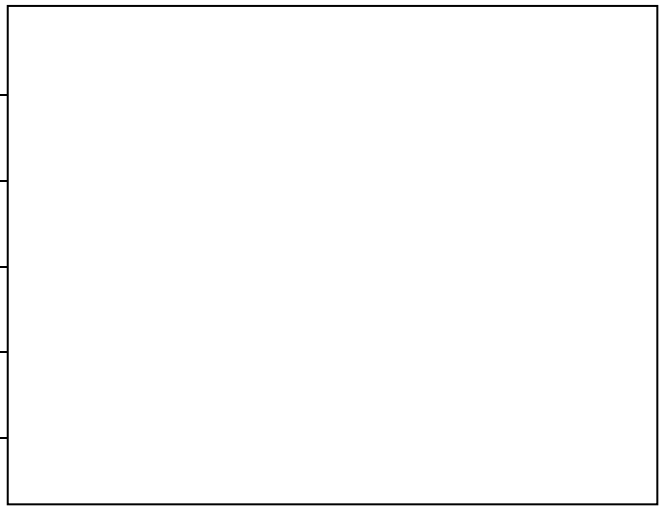
Day 6: Lesson 81
"People"



Day 6: Lesson 82 "Depth Perception in the Sense of Sight"





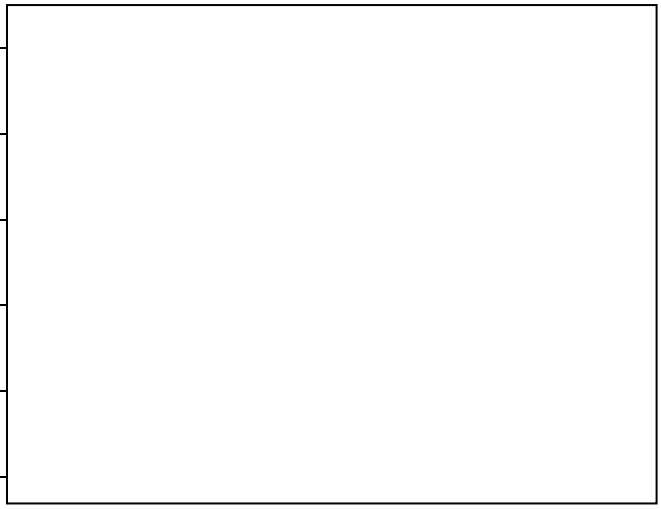


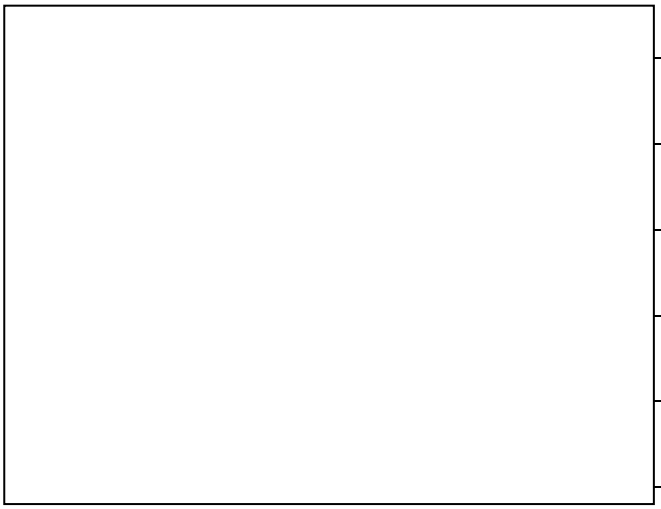
Day 6: Lesson 82
"Depth Perception in the Sense of Sight"

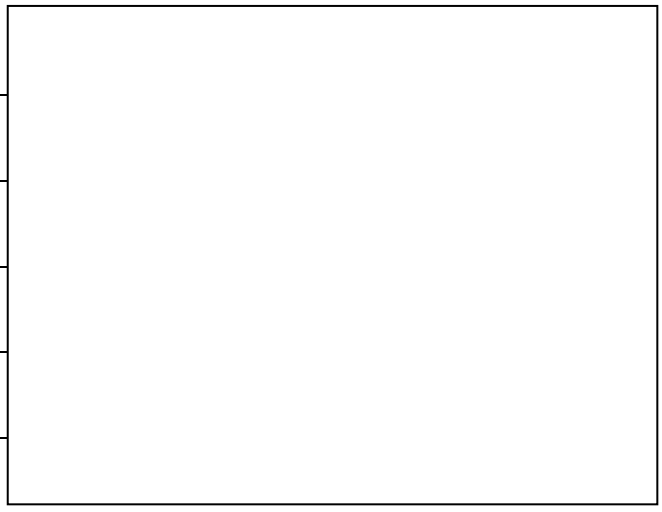
Draw two pictures similar to the ones on page 250, showing two animals that have different eye positions. (Or find two similar pictures to paste below.)

Explain why the animal with the 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. (Hint: use the term "binocular vision.")

Day 6: Lesson 83 "The Sense of Smell"





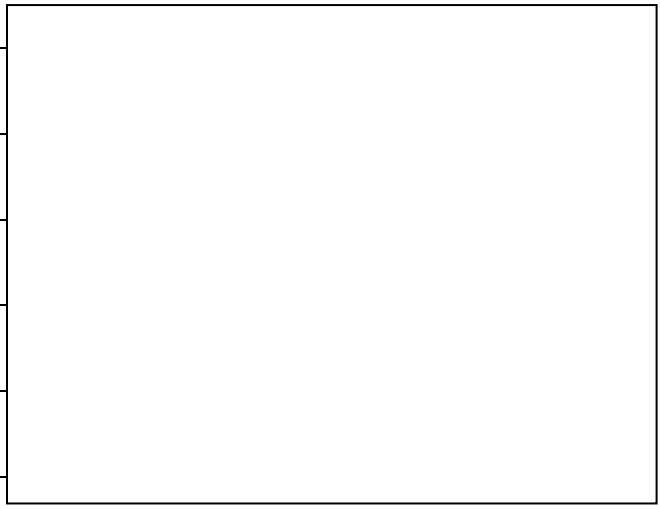


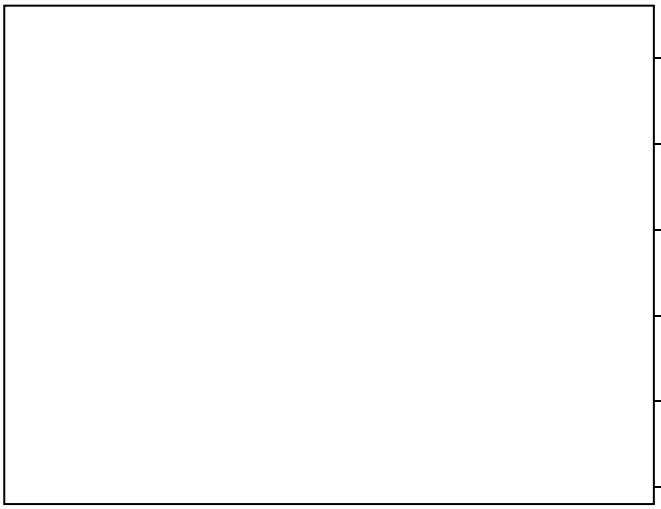
Day 6: Lesson 83
"The Sense of Smell"

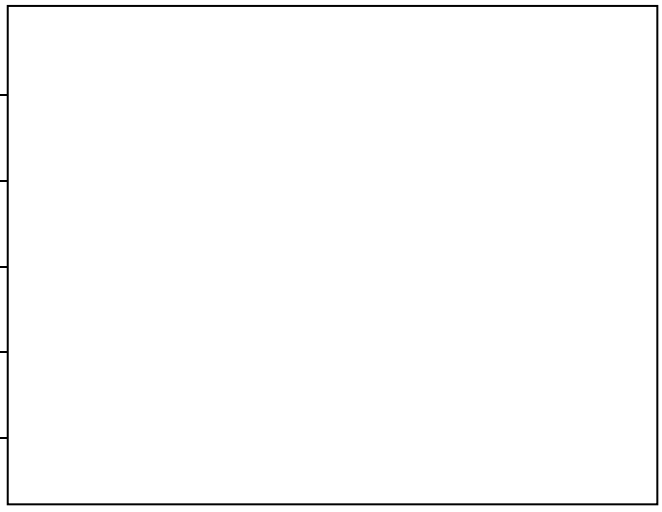
Draw a picture like the one on page 253. You don't have to have all the detail of the inside of the nose. Just draw the person, what he or she is smelling, and chemicals in the air going into the nose. Also, label the nare through which the air is entering.

Explain how this makes a sense of smell.

Day 6: Lesson 84 "The Sense of Hearing"







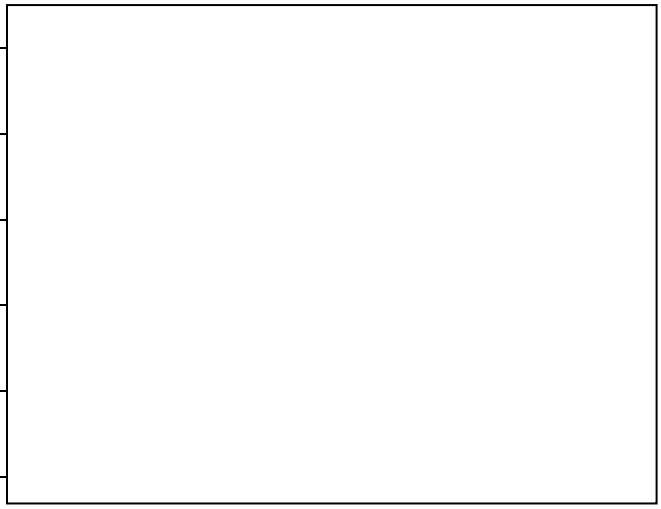
Day 6: Lesson 84

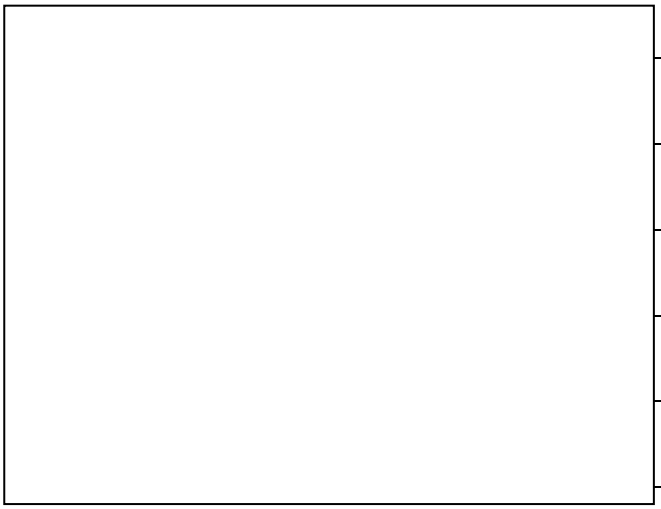
"The Sense of Hearing"

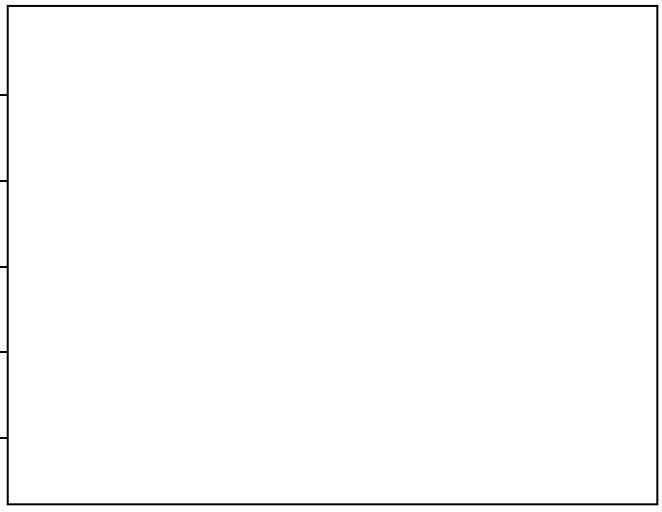
Draw a picture like the one on page 256. You don't have to have all that detail, however. Just draw the parts that are labeled in black.

Write an explanation of how your ear allows you to hear. Be sure to point out that sound is vibrations that travel through the air.

Day 6: Lesson 85 "The Sense of Balance"





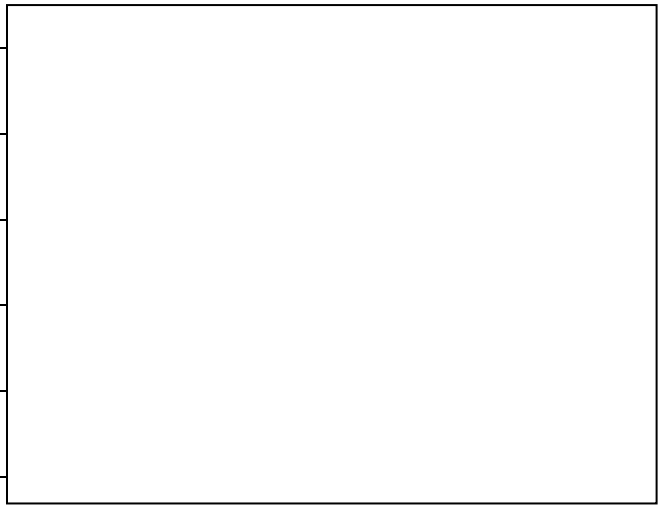


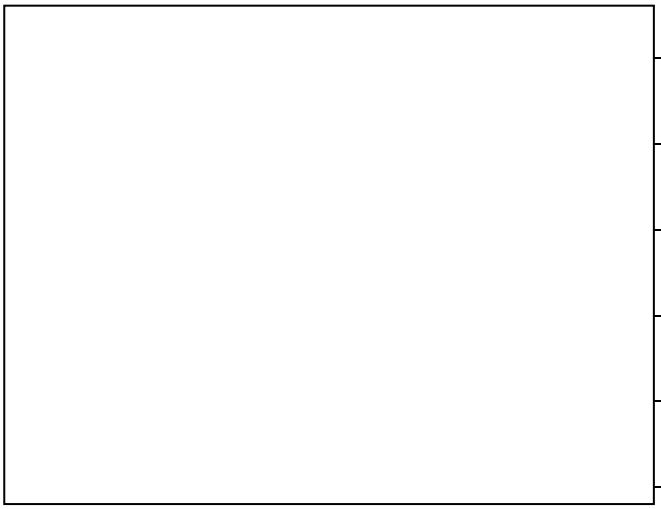
Day 6: Lesson 85
"The Sense of Balance"

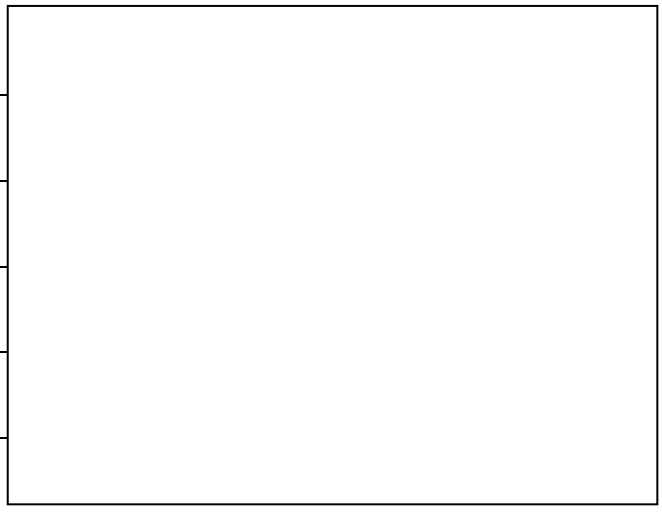
Write an explanation in your own words for how your static sense of balance works. Use the terms "vestibule" and "otoliths" in your explanation.

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

Day 6: Lesson 86 "The Sense of Taste"



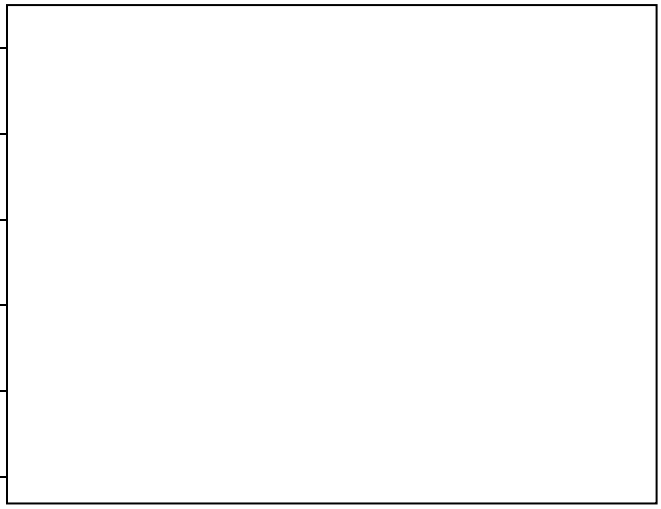


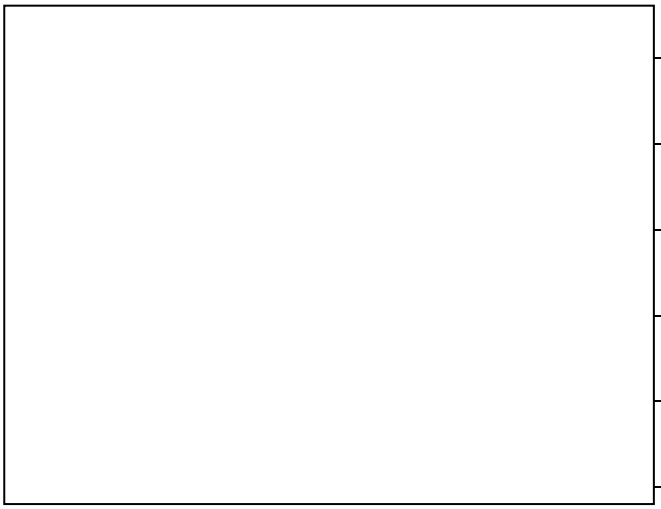


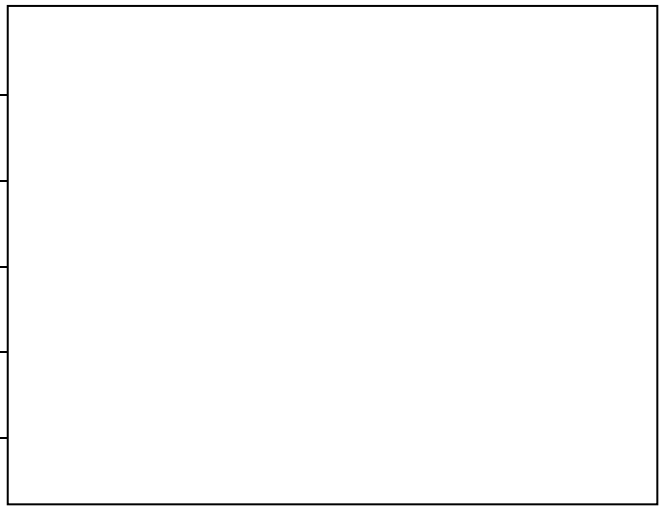
Day 6: Lesson 86
"The Sense of Taste"

Explain where your taste buds are and list the five basic tastes they can detect. Then explain how that allows you to taste all the wonderful flavors you can taste.

Day 6: Lesson 87 "The Sense of Touch"



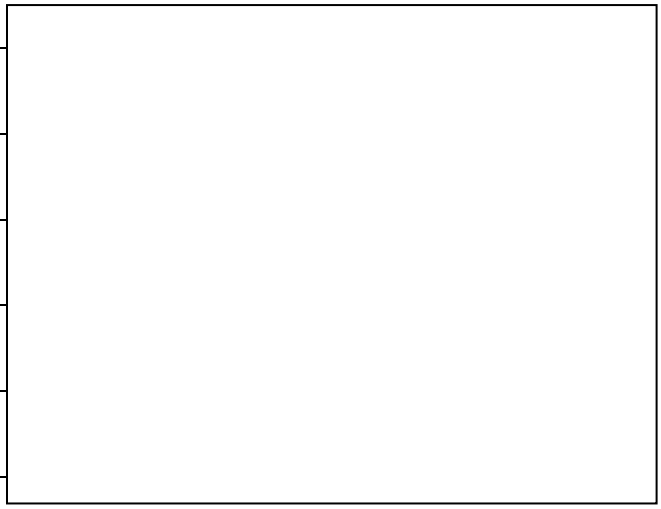


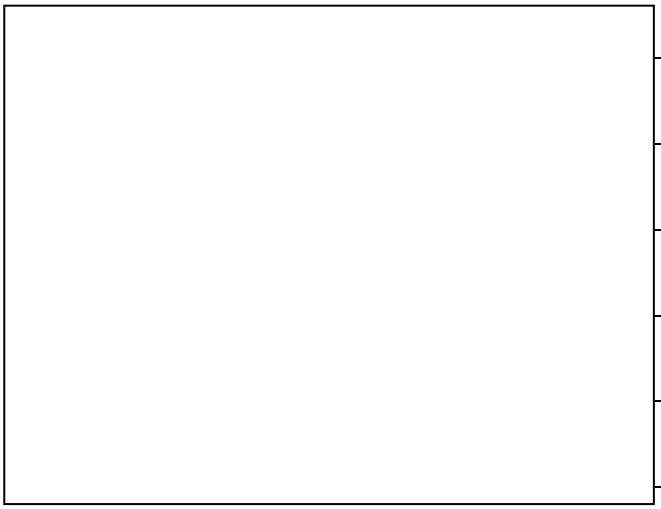


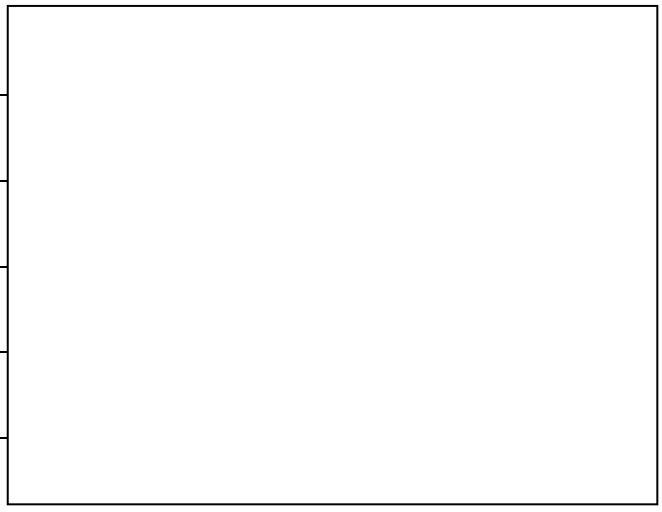
Day 6: Lesson 87
"The Sense of Touch"

Describe what happened in your experiment and why you felt what you felt. However, to give the story some creativity, write as if the receptors are actually talking to the brain. Write what they "say" to the brain as they feel the different things they felt in the experiment.

Day 6: Lesson 88 "Working Together"





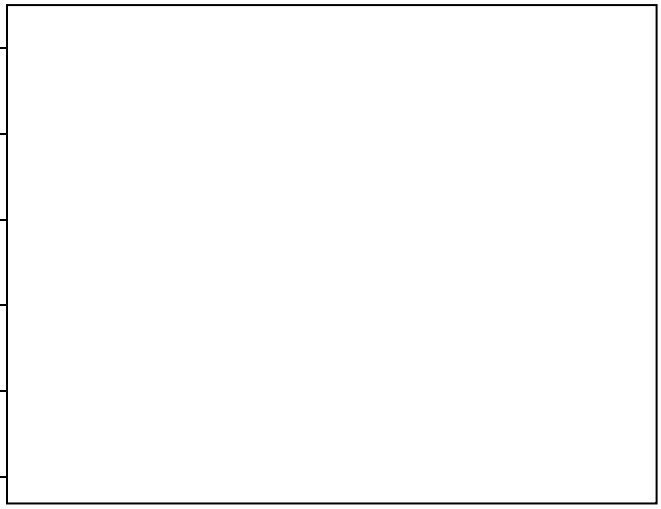


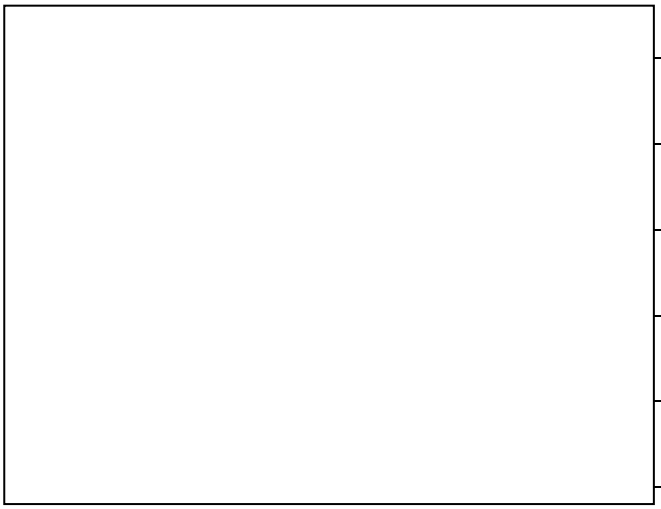
Day 6: Lesson 88
"Working Together"

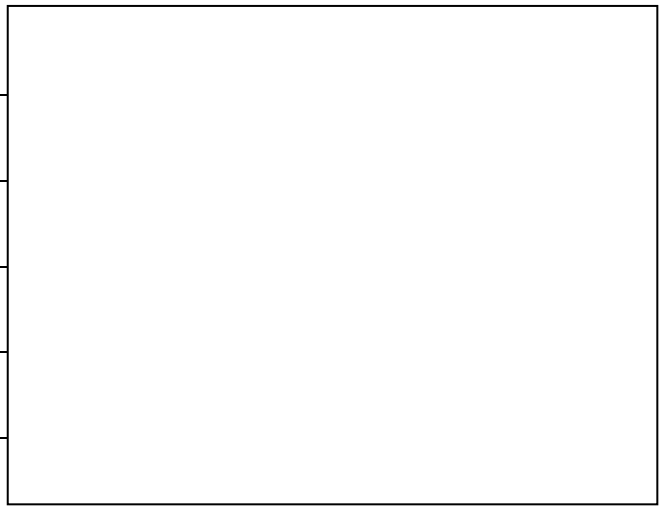
Draw a picture something like the illustration on page 268. It doesn't have to be nearly as detailed, but it should show the mouth, tongue, nose, nasal cavity, and throat. Draw dots that start on the tongue but continue all the way into the nasal cavity. The dots represent chemicals from food that is being eaten.

Explain how this allows your sense of taste and sense of smell to work together to produce the flavor of your food.

Day 6: Lesson 89 "More About Sight"





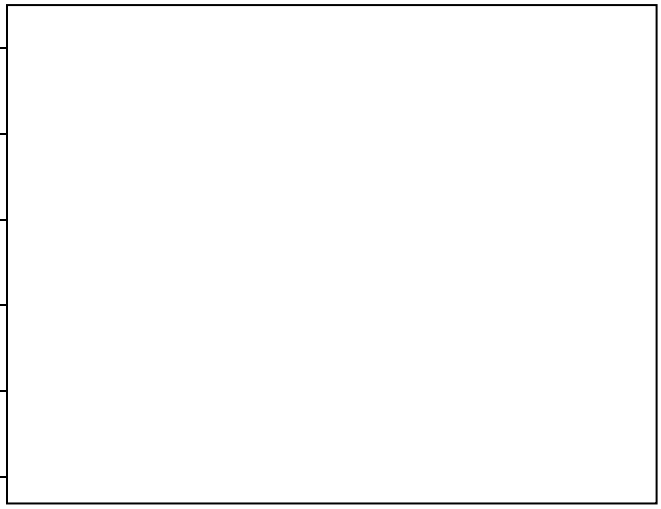


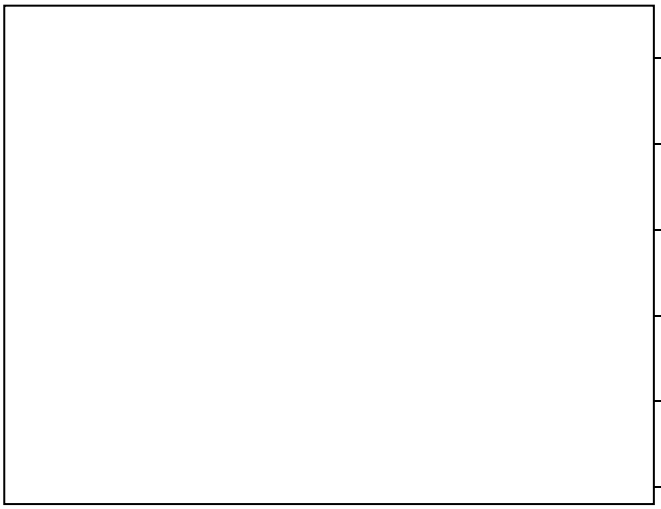
Day 6: Lesson 89
"More About Sight"

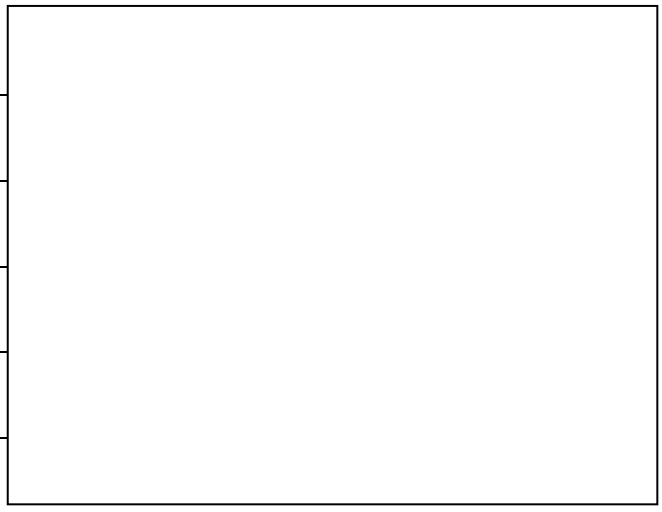
Draw two pictures of your eye during the experiment. Draw one picture that shows what your eye looked like in dim light, and draw another that shows what your eye looked like in bright light.

Explain why your eyes looked different. Be sure to use the words "iris" and "pupil" in your explanation.

Day 6: Lesson 90 "A Consequence of Depth Perception"







Day 6: Lesson 90
"A Consequence of Depth Perception"

Draw what your hand looked like in your experiment.

Explain why it looked the way it did. Use the words "optical illusion" in your explanation. Also explain what the dominant eye is, and write which is your dominant eye.