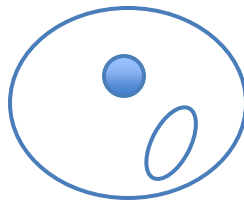


Day 1: Monday, November 4, 2011

Question: What is similar and different about plant and animal cells? Why are they similar, why are they different?

Prompt: Write and draw what you know about animal and plant cells. Cells are small things. Plant and animal cells are different. Plant cells have chloroplasts. Plants make their food. Plants need sunlight and water. Plant cells are simpler. I have blood cells.



Reading Notes

- All living things are made out of one or more cells
- Cells carry out the function of life
- Cells have organelles
- Plant cells have cell walls and are rectangular
- Plant cells have chloroplasts to help make food
- Animal cells are different shapes.
- Animal cells don't have cell walls
- Both plant and animal cells have:
 - Plasma "cell" membrane
 - Nucleus
 - Mitochondria
 - Cytoplasm

Prompt: Pick one note and write about why you think it is important. Animal cells don't have cell walls. I'm not sure what a cell wall is. Why don't animals have them?

Compare with your neighbor and add one new idea. Cell walls enable plants to stand up. That must be why animal cells don't have them. I think animals have backbones.

Day 2: Tuesday, November 5, 2011

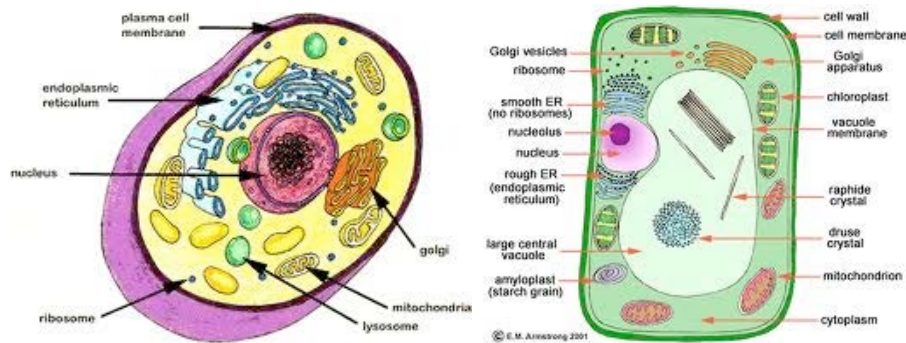
Prompt: observe a cheek cell and cell of a lily leaf under the microscope.
Draw and label what you observe.

Microscope Drawings (400x)



Prompt: Use your drawings from the text to label the part of the cell.

Cell Drawings from page 73



My cells don't look like this. Are they supposed to be square? How come I can't see all the stuff in my drawings?

Prompt: Compare and contrast your microscope drawing with the drawing in the text. What do you notice? Use notes from your reading to answer this question.

- From my reading notes, the microscope lab and the drawings, I know that plants and animals are made out of cells. They both have organelles like: nucleus, mitochondria, cell membrane, vacuoles, cytoplasm. Only plant cells have chloroplasts and a cell wall. The plant cell is rectangular and the animal cell is round.
- In the microscope I could only see some of the organelles that are in the pictures. The diagram showed more.

Prompt: What are you thinking about now?

- I thought plants were simpler, but I don't think so anymore because of the drawing and looking at it through the microscope. I know that plants and animal cells have similar organelles and different organelles, but I don't know why.
- I wonder if all cells look like the ones we looked at?

Day 1: October 2, 2011

Question: What do magnets stick to?

Prompt: Predict which of the following items a magnet will stick to.

Item	Yes/No
Chair legs	Yes
Table top	Yes
Whiteboard	Yes
Brads	Yes
Paper clips	yes
String	no
A Penny	yes
Scissors	yes
Rock	no
Rubber band	no
Washer	yes

Prompt: Record your data in a T-chart

Item	Yes/No
chair leg	yes
String	No
Paper clip	Yes
Brad	No
A Penny	No
Whiteboard	no
Scissors	Yes
Rock	No
Table top	No
Washer	Yes
Rubber band	No

*Prompt: What surprised you about your results? Why?
I thought a brad would stick because it is a metal. The paper clip stuck and that's a metal so I'm confused*

Prompt: Compare your data with your partner and together develop a rule that tells what a magnet will stick to. What is your evidence?

Magnets will stick to any silver or gray metal.

My evidence is that only the silver and gray metals in my chart stuck to the magnet. The brad is metal, but did not stick to the magnet.

Prompt: Challenge your rule. Here are 4 more items. Will they stick to your magnet?

<i>Item</i>	<i>Yes/No</i>
Classroom door	Yes
Soda Can	No
Stainless steel fork	No
Steel Nail	Yes

Prompt: Summarize your results

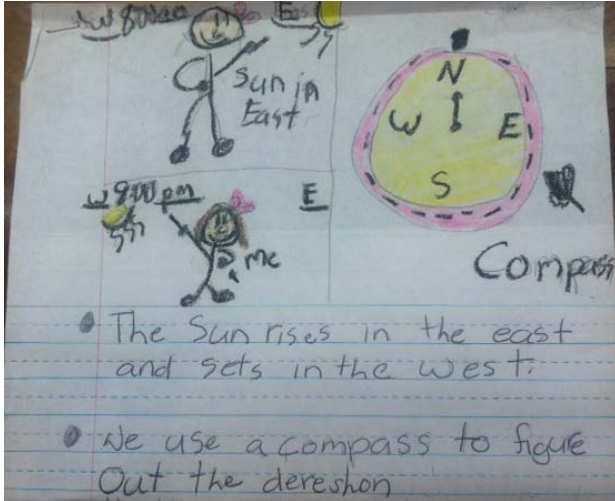
Magnets will stick to some metals and not others. The color does not seem to matter because the classroom door was yellow, the soda can was red and the fork was silver.

Prompt: I thought_____Now I know_____ I wonder_____

I thought that magnets stuck to all metals. Now I know that they only stick to some metals and won't stick to stuff that isn't made of metal. I wonder what is different about some metals that makes a magnet stick to them.

Day 1: October 28, 2011

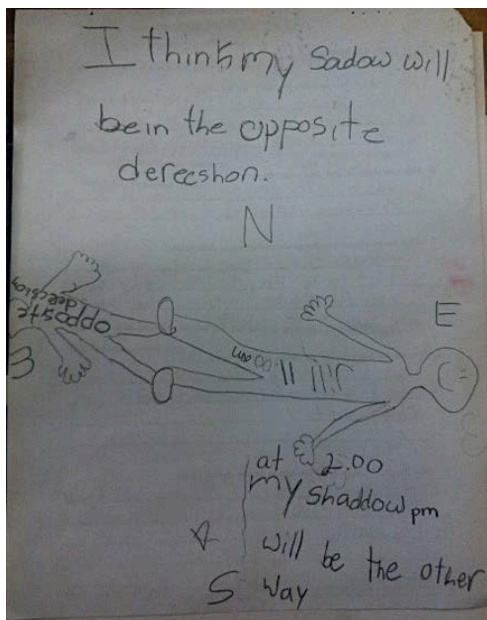
What do you remember about how the sun moves (from our last lesson)?



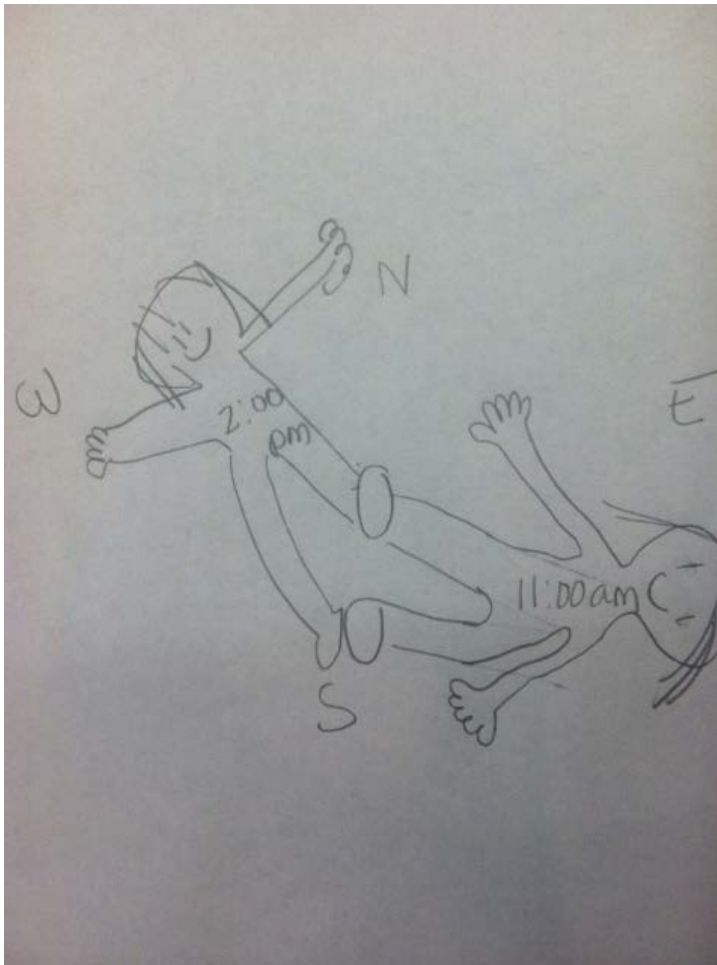
What are shadows and what causes them?

Shadows are people or objects reflected off the sun.

At 11:00 am, students have traced their shadow in chalk on the playground. Make a drawing of what your shadow looked like at 11:00 am. Predict what you think your shadow will look like at 2:00 pm. Do not forget to include N, S, W, and E in your drawing.



Students went back out and looked at their shadows at 2:00 pm and tracked their shadows on the ground again. They made additional drawings.



I thought that my shadow was going to be on the opposite side but I was wrong. The sun was not where I thought it was going to be.

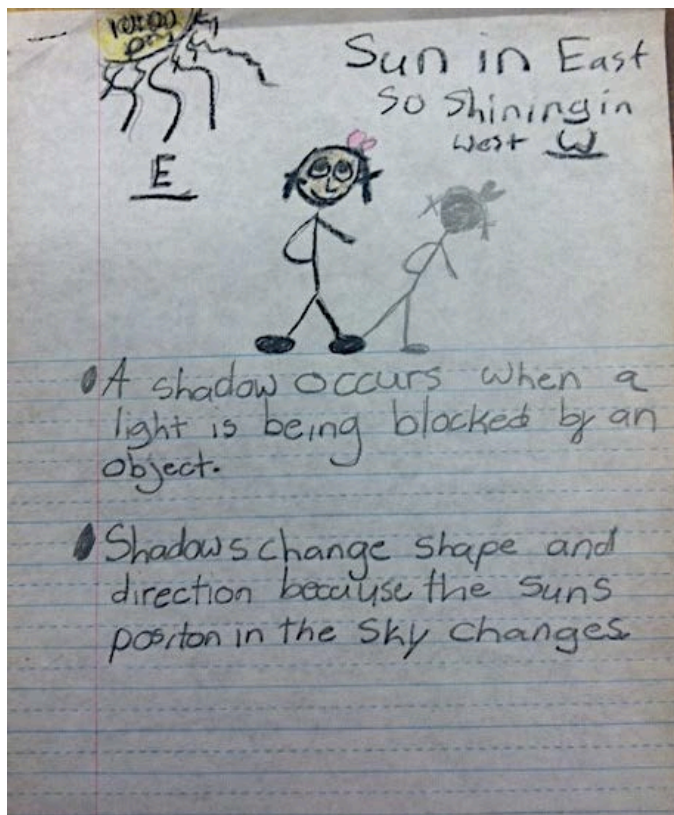
Day 2: October 29, 2011

Prompt: How did the sun's position and motion affect your shadow?

Shadows change size depending on the time of day it is. When the sun is in the east than your shadow will be in the west. I now know that wherever the sun is my shadow will be on the opposite side. I am blocking the sun's light and that makes the shadow. I don't know why the shadow gets taller or smaller.

Day 3: October 30, 2011

Prompt: Where do shadows come from and what causes them to change? Include a drawing in your explanation.



SOME Prompts and Mechanisms for Eliciting Student Thinking

Prior Knowledge

Prompts

- I think _____ about _____'
- This is what I know about _____
- What is something you remember about _____
- What are some examples of _____
- This is like _____ because _____
- Predict what you think will happen
- How do you think this works?

Mechanisms

- Discrepant events: what is occurring
- Visuals: what does this remind you of
- Total Physical Response to show what you know
- Write the ideas on post-its; compare with a partner
- Write ideas on whiteboards and share

Data Collection

Prompts

- Display data in two ways
- How can you measure _____?
- What do you _____ (insert senses)
- What are the outliers?
- How could you organize your information so that someone else could understand what you did?
- Compare your information with _____ and make adjustments

Mechanisms

- Real data (e.g. pile pennies)
- Use post its for bar graphs
- Notes on videos or reading
- Use diagrams, drawings, illustrations

Sense Making

Prompts

- Explain to your friend
- I noticed
- Compare data
- Share data with another group; look for similarities and differences
- Make an explanation (claim, evidence, reasoning)

- Refer to _____ and explain how this experience relates
- What might be the reason for outliers?
- How does what you experienced today relate to the Big Idea concept on the wall?

Mechanisms

- Use graphic organizer
- Construct and graph and summarize data
- Produce a product (e.g., brochure, letter to governor, poster)
- Create new experiment based on findings

- Use a snowball (students write what they know, toss in air; next student picks it up and adds to the first comment)

Metacognition

Prompts

- Before I thought _____ Now I know _____
- Choose the task that is easier/more difficult for you and explain why
- I know this for sure _____ I am not sure about _____
- What would you change and why?
- Where in the process did you struggle? Why?
- What amazed you? Why
- I wonder _____
- How do I know this?
- What is one thing you still have a question about?

Mechanisms

- Post Card to self with metacognitive prompts/answers
- Explain phenomenon to a younger student
- Reflection in notebook