Maureen M. Drees

General Science Lesson Plans

January 22-26, 2018

Note: Wednesday is a 2:25 dismissal for professional development.

Essential concepts and skills emphasized in the week’s lessons will be highlighted.

Disciplinary Core Ideas

Life Science

1. From molecules to organisms: Structures and processes
2. Ecosystems: Interactions, energy, and dynamics
3. Heredity: Inheritance and variation of traits
4. Biological Evolution: Unity and diversity

Earth and Space Science

1. Earth’s place in the universe
2. Earth’s systems
3. Earth and human activity

Physical Science

1. Matter and its interactions
2. Motion and stability: Forces and interactions
3. **Energy**
4. Waves and their applications in technologies for information transfer

Science and Engineering Practices

1. **Asking questions and defining problems**
2. **Developing and using models**
3. Planning and carrying out investigations
4. Analyzing and interpreting data
5. Using mathematics and computational thinking
6. **Constructing explanations and designing solutions**
7. **Engaging in argument from evidence**
8. **Obtaining, evaluating, and communicating information**

Cross-Cutting Concepts

1. Patterns
2. **Cause and effect**
3. Scale, proportion, and quantity
4. **Systems and system models**
5. **Energy and matter**
6. **Structure and function**
7. Stability and change

Monday—

* 1. Discuss and hand in Get to Work lab
	2. Review with students how to calculate work
	3. Have two students lift the same soup cans, one in more time and one in less time, discuss with class that they did the same amount of work, establish the difference was in how quickly they did the work, use to introduce the concept of power
	4. Calculate P=W/t for each student

Tuesday—

* + 1. Read and take book notes together pages 214-215 8.1b Work and Power
		2. Practice math for W=Fd and P=W/t

Wednesday—shortened periods

* + - 1. Have students try to open fruit can with fingers, with church key can opener
			2. Discuss why using can opener made the work take less force because more distance was traveled
			3. Define simple machine, how it takes the same amount of work, but less force
			4. Read and take book notes together pages 216-221 8.2 What is a Machine?

Thursday—

* + - * 1. Read and take book notes together 8.3 Types of Machines pages 222-228
				2. Examine one example of each of the six simple machines as we read

Friday—

Finish reading about simple machines, if needed

Look at additional examples of each of three simple machines (Lever—mouse trap, balance, church key opener, clothespin)

(Wheel and Axle—pencil sharpener, wheel on toy car, doorknob)

(Inclined Plane—ramp, loop de loop, inclined tunnel)

Talk about mechanical advantage of each, takes less force if you go more distance

Brainstorm additional examples, record