# Pequea Valley School District
# Science

**Unit: Cells and Microscopes** **Course: Science** **Grade: 5th**

## Planning the Focus Based on the Desired Result
**What do you want all students to know, understand and do by the end of the unit?**

### Unit Essential Question(s)

What are cells?
How can we observe cells?
What are the parts and function of animal and plant cells?
What are similarities and differences of plant and animal cells?

### Keystone Eligible Content/PA Core Standard

S5.B.1.1.2 S5.B.1.1.3 S5.A.2.2.2 S6.A.2.2.1 S5.B.1.1.1

### Pacing: Approximate number of class sessions per unit

6-8 Weeks

### Tier 3 Vocabulary (Content specific vocabulary)

cell organism cell theory organelles cell wall cell membrane chloroplast cytoplasm endoplasmic reticulum golgi body

large vacuole lysosome mitochondria nuclear envelope nucleus ribosome small vacuole

**Know -** What do students need to **know** in order to be able to do and understand? *List concepts, such as facts, formulas, key vocabulary and knowledge "nuggets".*

Living things are made up of cells
Cells are the smallest unit of structure in living things
Organelles within the cell each have a job to maintain that cell
Cells form together to create tissues, organs, and organ systems

**Understand -** What do students need to **understand**? What is the **big idea**? ***List broad concepts or "big ideas" in a statement of enduring understanding.***

Living things are made up of cells
Cells are the smallest unit of structure in living things
Cells form together to create tissues, organs, and organ systems

**Learning Outcome -** What do students need to be able to **accomplish** by the unit's end? ***List skills and competencies, NOT learning activities.***

Students will recognize that cells are the smallest unit of structure and function in living things
Students will create a model of a cell
Students will explain the function of various cell organelles
Students will differentiate between plant and animal cells
Students will recognize that cells form together to create tissues, organs, and organ systems

Literature:

Software/Resources:

Teacher created materials

Microscopes

# Pequea Valley School District
# Science

**Unit: Scientific Method and Inquiry / Variables** **Course: Science** **Grade: 5th**

## Planning the Focus Based on the Desired Result
**What do you want all students to know, understand and do by the end of the unit?**

### Unit Essential Question(s)
How can we use scientific experiments and observations to make sense of our world?
How do variables affect the outcomes of a controlled experiment?

### Keystone Eligible Content/PA Core Standard
S5.A.1.1.1 S5.A.1.1.2 S5.A.1.1.3

### Pacing: Approximate number of class sessions per unit
10 - 12 weeks

### Tier 3 Vocabulary (Content specific vocabulary)
evidence, independent/dependent variables, hypothesis, predictions, conclusions, scientific method, inquiry

**Know -** What do students need to **know** in order to be able to do and understand? ***List concepts, such as facts, formulas, key vocabulary and knowledge "nuggets".***
1. Understanding the steps of the scientific method
2. The ability to use basic inquiry skills such as: observing, predicting, and inferring
3. Understanding the difference between independent and dependent variables
4. The ability to conduct simple controlled experiments
5. The ability to interpret data and make predictions for various outcomes of a controlled experiment
6. Understanding methods of recording data and analyzing data to formulate conclusion

**Understand -** What do students need to **understand**? What is the **big idea**? ***List broad concepts or "big ideas" in a statement of enduring understanding.***

Scientists ask and answer questions about our world through scientific inquiry.
Scientists use experimental results to support inferences about an investigation.

**Learning Outcome -** What do students need to be able to **accomplish** by the unit's end? ***List skills and competencies, NOT learning activities.***

Students need to know the steps of the scientific method
Students need to recognize both dependent and independent variables in a controlled experiment
Students need to understand how variables can affect the outcome of a controlled experiment
Students need to demonstrate their ability to record and analyze data
Students need to demonstrate their ability to draw conclusions based on data from a controlled experiment

Literature:

Software/Resources:

Foss Kit- Variables Unit