

# Experiments with Plants Storyline

## STC Sixth Grade

**Unifying Concept:** Systems, Order, and Organization; Evidence, Models, and Explanation; Constancy, Change, and Measurement; Evolution and Equilibrium; Form and Function

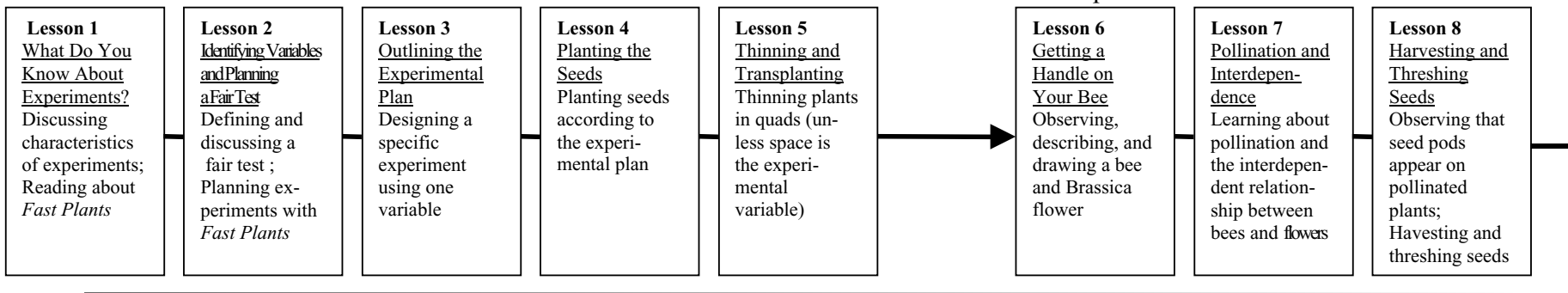
**Big Idea:** Science experiments include variables (conditions that change) and controls (conditions that remain constant). In a controlled experiment, only one variable is changed. Variables for the optimal growth of *Wisconsin Fast Plants* include continuous water and cool light, fertilizer, space, cross-pollination, and temperature between 70... F and 80... F.

### Sub Concept I: Experiments Part 1

A good experiment is like a fair test, during which only one variable is tested at a time.

### Sub Concept II: Plants Part 1

Pollination allows fertilization and seed production to take place.



### Sub Concept III: Experiments Part 2

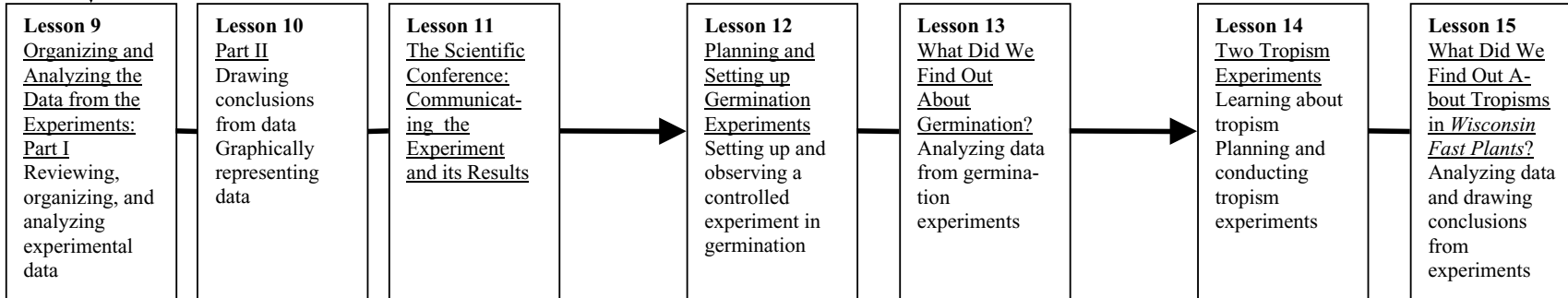
Conclusions from an experiment are based on careful record keeping growth from a seed.

### Sub Concept IV: Plants Part 2

Germination is the beginning of new growth from a seed.

### Sub Concept V: Plants Part 3

Tropism is the growing or bending of a plant in response to external stimulation.



**Description of Assessment:** Post unit assessment includes revisiting list from lesson 1, self-evaluation, evaluating student work (e.g. science notebook)

**Science Process Skills:** Observing, Questioning, Comparing, Communicating, Interpreting, Relating, Predicting, Inferring, Applying, Organizing

**National Science Standards:** 5-8 Life Science; History and Nature of Science; Science as Inquiry

**California Science Standards:** Investigation and Experimentation 7a-c

# Measuring Time Storyline

## STC Sixth Grade

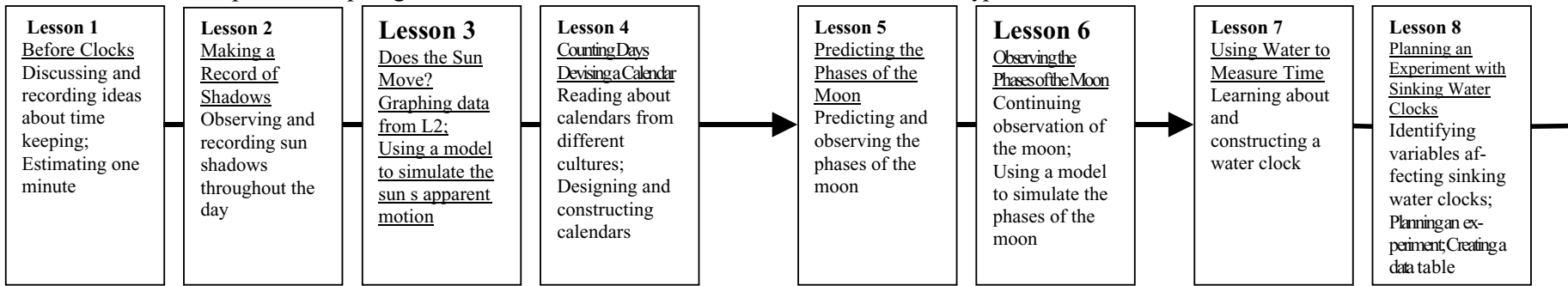
**Unifying Concept:** Systems, Order, and Organization; Evidence, Models, and Explanation; Constancy, Change, and Measurement; Evolution and Equilibrium; Form and Function

**Big Idea:** Time can be measured by observing the natural cycles of the sun and the moon. Mechanical devices can be constructed and used to consistently measure specific intervals of time.

**Sub Concept I:** The changes in length and position of a shadow can be used to keep track of the passage of time.

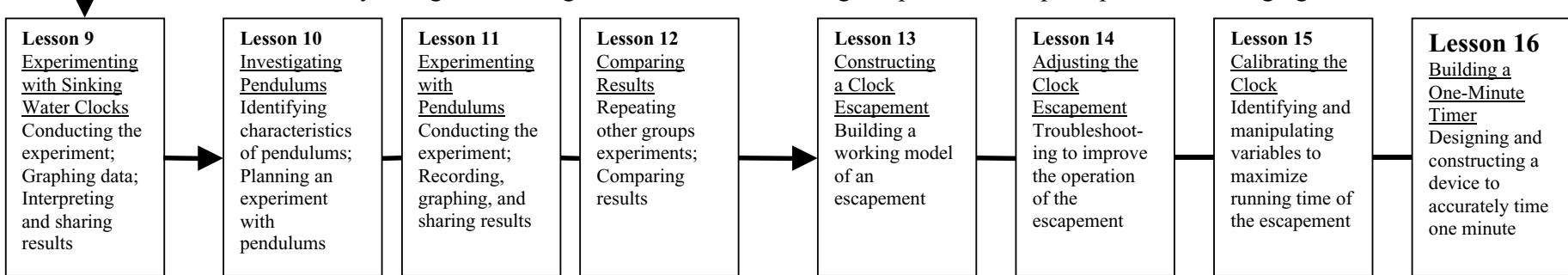
**Sub Concept II:** The cyclical phases of the moon are a type of natural clock.

**Sub Concept III:** A water clock can measure short intervals of time.



**Sub Concept IV:** The frequency of a swing pendulum is affected by changes in its length.

**Sub Concept V:** In a pendulum clock, an escapement delivers the regular pushes to keep the pendulum swinging.



**Description of Assessment:** Pre-unit assessment (L 1), revisiting lesson 1, final assessment: self-assessment, questions about clocks, new predictions on moon s phases, review student work (e.g. science notebook)

**Science Process Skills:** Observing, Questioning, Communicating, Interpreting, and Applying

**National Science Standards:** 5-8 Physical Science; Science & Technology; Science in Personal and Social Perspectives; History and Nature of Science; Science as Inquiry

**California Science Standards:** 6: Investigation and Experimentation 7b-e

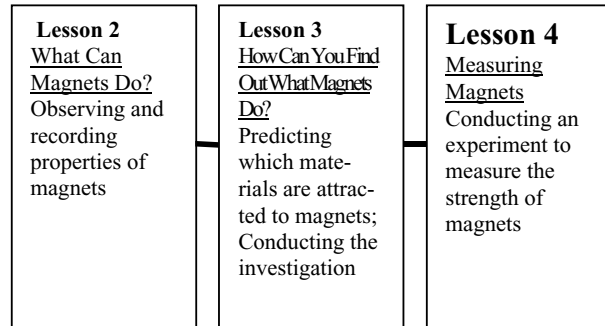
# Magnets and Motors Storyline

## STC Sixth Grade

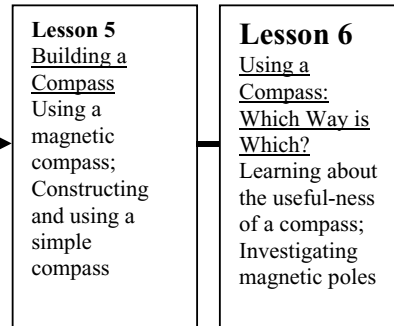
**Unifying Concept:** Systems, Order, and Organization; Evidence, Models, and Explanation; Form and Function

**Big Idea:** Magnets attract and repel each other; this attracting and repelling can be used to cause motion.

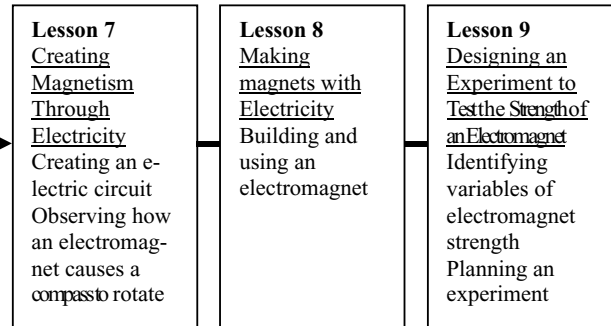
**Sub Concept I:** Magnets attract certain materials. Magnets have a north and a south pole.



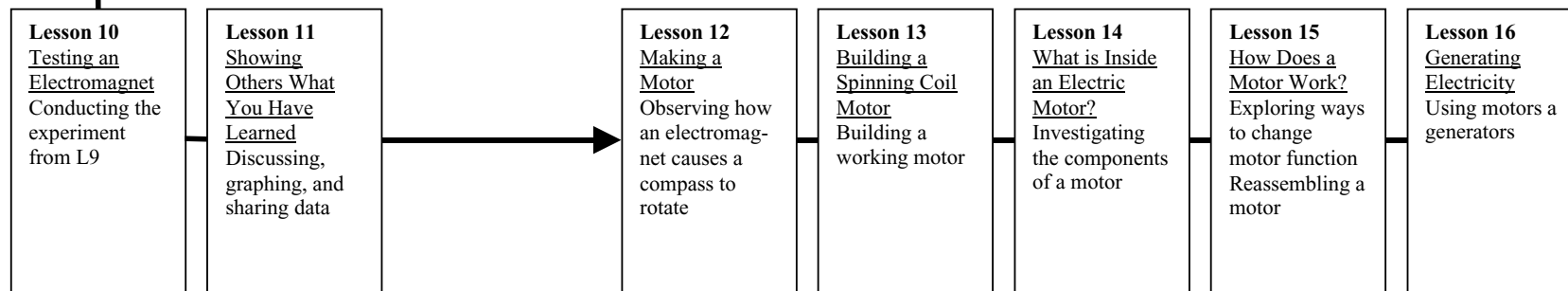
**Sub Concept II:** Magnetic compass needles point to the Earth magnetic



**Sub Concept III:** An electric current passing through wire produces magnetism.



**Sub Concept IV:** Motors use electromagnetism to convert electricity into mechanical work.



**Description of Assessment:** Pre-unit assessment (L 1), four post-unit assessments cover various concepts from lessons 7, 12, 13, measurement and revisit of L 1, review student work (e.g. science notebooks)

**Science Process Skills:** Observing, Questioning, Comparing, Communicating, Inferring, and Applying

**National Science Standards:** 5-8; Physical Science; Science & Technology; Science in Personal and Social Perspectives; History and Nature of Science; Science as Inquiry

**California Science Standards:** Science; Investigation and Experimentation

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