Science Learning Progression

FOSS Models and Designs   Grades: 6-8

Prerequisite knowledge: One way to describe something is to say how it is and how it isn't.

MODEL OF THE DAY!
Introduce a model every day.

Explain that a *model* is used to represent objects, events, *systems*, and *processes*. However, models have limitations.

Inv. 1, parts 1, 2, & 3

5 days

I can design a model and identify its limitations.

FA:
Commit and Toss: Given a model, summarize the use and limitations of the model.

Formulate a hypothesis and create a model to represent the behavior of phenomena and test the hypothesis.

Investigation 2: Humdingers

I can use a model to test my hypothesis.

FA:
Students compare their model to the actual Humdinger.

Design a model that meets given criteria in an investigation. Identify the controlled and manipulated variables.

Investigation 3: Part 1 Free Rolling Carts

I can identify controlled and manipulated variables and investigate how they're related.

FA:
Think /Pair/ Share "No Hands Up" Questioning

Manipulate a variable to change the outcome of an investigation. Measure and record the responding (dependent) variable .

Investigation3:
Part2 Self-propelled go-carts
Part 3 2-meter run

I can measure and record the responding (dependent) variable to show that manipulating one variable changes results in an investigation.

FA:
Journal or discussion: Look at your data table: How does the data help you evaluate the performance of your car?

To test a hypothesis ("If..Then..Because") *about a relationship between two variables in a controlled experiment*

Investigation 4
Cart Tricks

I can plan and *conduct an investigation to* perform a controlled experiment.

FA:
Performance task

6-8INQE
Models are used to represent objects, events, systems, and processes. Models can be used to test hypotheses and better understand phenomena, but they have limitations

6-8 INQD
For an experiment to be valid, all controlled variables must be kept the same whenever possible, except for the manipulated (independent) variable being tested and the responding (dependent) variable being measured and recorded.

Later big ideas that build on this big idea include:
6-8 INQF, Explain
6-8 INQG, Communicate

Northwest Educational Service District 189
Together We Can

Math & Science Collaborative Inquiry Project

LrnProg_6_8_INQE_INQD_Inquiry_InvestigatingModels_kdj