



SETTING-UP EACH STATION

Following are the materials and procedures for setting up each station.
Printed instructions for each station are in the box.

#1 PENDULUMS

- A stand with a horizontal arm
- 2 strings of equal length
- 1 heavy washer
- 1 light washer

Attach one washer to the end of each string. Attach the other end of each string to the horizontal arm on the stand.

What Scientific Practice is used by answering the blue underlined questions below?

The two pendulum bobs are different weights.

Use them to determine if the weight of the bob makes any difference in how fast the pendulum swings.

What did you discover about the swing of the pendulum with different weight bobs?

What are some ways to improve the investigation so that you would be confident in the results.

#2 HINGED MIRRORS

- 2 small mirrors hinged with duct tape
- Protractor
- Coin

What Scientific Practice is used by answering the blue underlined questions below?

Place the penny between the hinged mirrors so that reflections of the coin can be seen.

Adjust the angle of the mirrors to 120° and count the reflections. Repeat for angles of 30° and 90° .

What is the relationship between the number of images and the size of the angles?

Based on what you observed how many images would you expect to see at 60° ?

#3 STICKY WATER

- Mini teacup
- Plastic cup with water
- Dropper
- Modeling clay
- Unsharpened pencil
- Toothpicks

What Scientific Practice is used to complete the blue underlined procedures and questions below?

Use the dropper to fill the mini teacup with water. Count the number of drops it takes to fill it.

Try to spill the water out of the teacup. What happens?

Create a cup using the clay which you think will hold more water than the mini teacup. Using the dropper fill it with water and count the drops. Did your model hold more water than the mini teacup?

#4 LIDS AND STRING

- 3 jar lids of different sizes labeled 1-3
- Metric ruler
- String
- Calculator

What Scientific Practice is used to complete the blue underlined procedures and questions below?

Carefully surround Lid 1 with a length of string. Then hold the string taut along the metric ruler to determine the circumference of the lid to the nearest millimeter.

Record the measurement.

Repeat with the other lids.

Measure the diameter of each lid by placing the metric ruler across each lid.

Record the measurements on the data table.

For each lid divide the circumference by the diameter using a calculator. Record the result for each lid.

What can be said about the result when the circumference of any circle is divided by its diameter?

LIDS AND STRING DATA TABLE

Lid Number	Circumference in mm	Diameter in mm	Circumference ÷ Diameter
1			
2			
3			

#5 TOYS ON DIFFERENT SURFACES

- Windup toy

What Scientific Practice is used by answering the blue underlined questions below?

Suppose you were doing an investigation to find out whether the kind of surface on which a windup toy is placed makes a difference in how far the toy moves.

Before doing the investigation, determine the following:

- ⊙ What will be changed?
- ⊙ What will be kept the same?
- ⊙ What will be measured?

#6 PENNY DROPS

- 1 penny
- Cup with water
- Dropper
- Paper towels

What Scientific Practice is used by answering the blue underlined question below?

Place the penny on the paper towel.

Use the dropper to carefully drop as many drops of water on the penny as possible until it holds no more.

Given your observations what more do you want to know?

#7 INDEX “CARS”

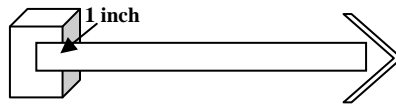
Block of wood 2.5” made from a 2” x 4” with sides labeled 1.5”, 2.5” and 3.5” (measurements do not have to be exact!)

3” x 5” card folded “hamburger style”

1 marble

What Scientific Practice is used by answering the blue underlined questions below?

Place the ruler on the block of wood with the 1” mark at the edge of the block.



Place the folded index card at the other end of the ruler.

Release the marble starting at the 1”mark on the ruler so it rolls down the groove.

Note what happens to the index “car.”

Repeat the steps above for each height on the block.

What conclusions can you draw based on your observations?

What might you do to further validate your conclusions?