

Physical Science 6

(Copy the following lab activity set up in your science notebook.)

Title: Activity 9 "Forces"

Stated Problem: How do forces affect motion?

Background:

- A force is a push or a pull. All forces have both a direction and a size (magnitude). Forces are vectors.
- A force can cause an object to change its speed or direction. The unit used to express force is the newton (N).
- Forces exist only when there is an object for them to act on.

Hypothesis: (Create a hypothesis based on what you know about forces.)

Vocabulary:

| Word | Definition | Picture |
|-----------|------------|---------|
| force | | |
| net force | | |
| inertia | | |

Materials:

Table captains check that your lab trays have all of the same materials at the start and end of each lab.

Procedures:

1. Read pages 30 - 41 in *Motion, Forces, and Energy* book. Find 14 facts about forces and motion. Record these in science notebook in Data/Results in Table 1.
2. Answer questions #6 - 22 beginning on page 30. Write answers in science notebook in Data/Results section.
3. Do Lesson Review on page 41, questions 1 - 9. Write answers in science notebook in Data/Results section.
4. Watch class demonstration "Balloon Action". Record your predictions in lab handout.
5. Complete Activity 10 Lab 1 "First Law of Skateboarding". Follow directions in lab handout. Answer all questions in handout.
6. Complete Activity 10 Lab 2 "Second Law of Motion - Energy Car Investigation B4". Read and follow lab packet procedure for energy car and track. Create a data table in Data/Results section to record all data for Lab 2.

Data/Results:

(Write observations, make drawings, and answers questions from book reading in your science notebook under this section,)

Table 1
Laws of Motion Facts

| Fact # | Description/Detail |
|--------|--------------------|
| 1 | |
| 2 | |
| 3 | |
| 4 | |
| 5 | |
| 6 | |
| 7 | |
| 8 | |
| 9 | |
| 10 | |
| 11 | |
| 12 | |
| 13 | |
| 14 | |

Conclusion:

1. How do forces affect motion? Use data/evidence from the reading and Activity 10 Lab 1 and Lab 2 to support your answer.
