

PHYSICS I: ZIP, ZAP, ZING, AND ZOOM!

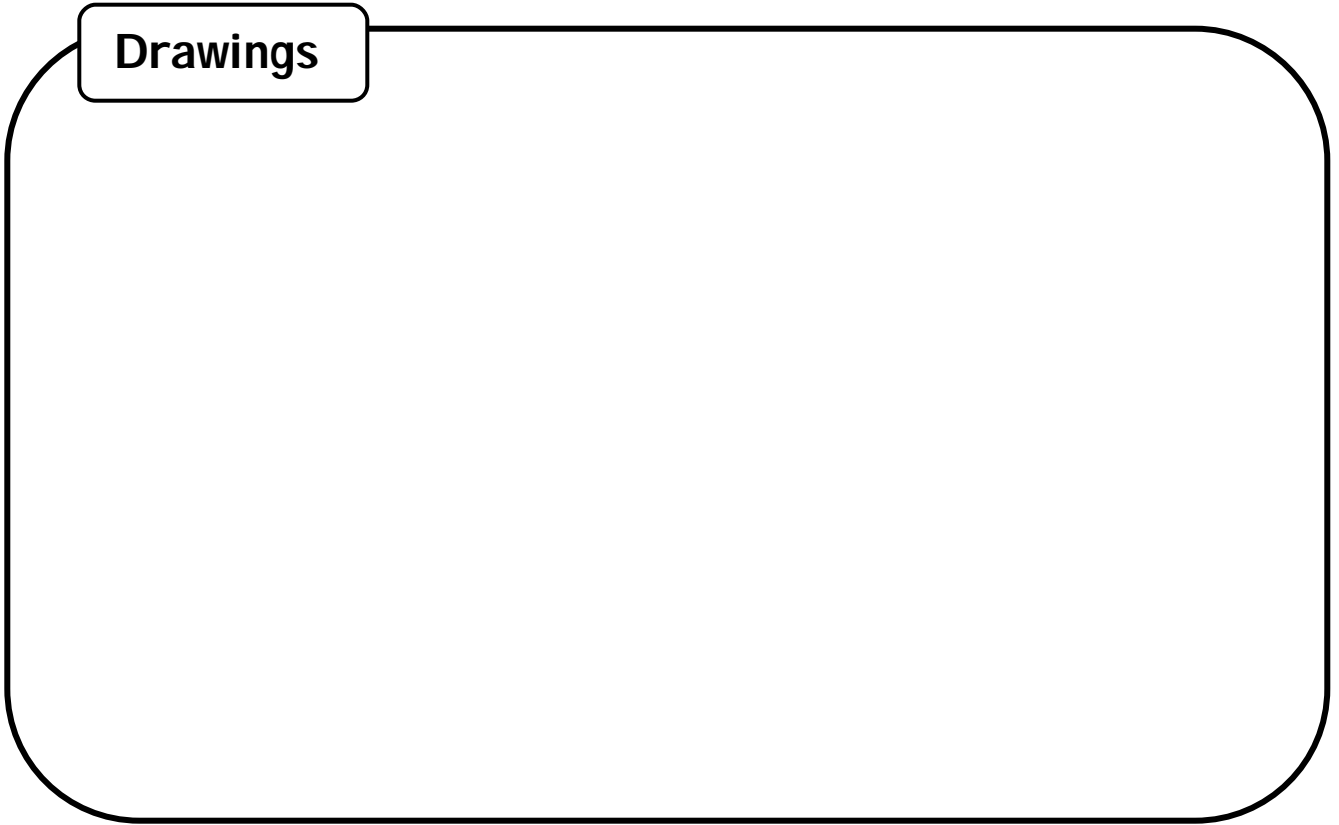
INSTRUCTOR'S GUIDE

Dr. Randy Pritchard

Reproducible Pages

Science Notebook Page
Lab Notebook Page

Drawings



Reading Notes

Definitions

Date _____

Experiment Name _____

What have you learned about this subject?
(observation/research)

What question are you trying to answer?
(question)

What things do you need?
(materials)

1. _____
2. _____
3. _____
4. _____
5. _____
6. _____
7. _____
8. _____

What will you do to answer the question? (experiment/test)

What do you think will happen? (hypothesis/prediction)

What happened? (results)

Why do you think this happened? (conclusion)

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Weekly
Reading and Assignment
Schedule

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Book List

Straightforward Science: Forces and Movement

Magnetism

Light and Color

How Do You Lift a Lion?

How Ben Franklin Stole the Lightning

The Explosion Zone: Faraday, Pioneer of Electricity

The Inventor's Times

Early Biographies: Albert Einstein

Rubber Band Banjos and Java Jive Bass

Starry Messenger

DK Eye Wonder: Space

Experiment Kits

Ein-O's Discovery Tank: Mechanical Science

The Young Scientist Club Kits:

- **Kit #3 Magnets**
- **Kit #16 Flight**
- **Kit #21 Light**
- **Kit #22 Mirrors**
- **Kit #33 Forces**

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The following is a complete list of items that will be used for the required experiments over the entire 36-week course. This list includes many items that are common in most homes. The list does not include the items that are provided in *The Young Scientists Club* kits.

Master Supply List	
Item needed:	Week(s) used:
Large piece of cardboard or wood	2, 3
Glue	2, 3
Scissors	2, 3, 17
2-liter (empty) soda bottle	3
2 eggs	4
2 chairs	4, 16
Tape	4, 9, 16, 17, 23, 25
Bright light source (e.g. lamp)	5
Colored pencils or markers	6
Pencil	6, 23
Glass of water	7
Large mirror (e.g. bathroom mirror)	8, 21
Piece of paper	9
Large metal spoon	9
Small toy car or block	16
Balloon	21
Various small household items (to test for magnetism)	24
Permanent marker	25
Cereal bowl	25

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Week 1 – Forces and Gravity				
	Day 1	Day 2	Day 3	Day 4
Forces and Movement	Pp. 4-5	Pp. 6-7	Pp. 12-13	Pp. 14-15
Optional	Investigate! Forces and Movement pg. 5	Investigate! Forces and Movement pg. 7	Investigate! Forces and Movement pg. 13	Investigate! Forces and Movement pg. 15

Supply List: none

Assignments:

Day 1 – read the assigned pages and describe and/or sketch what you learned in your science notebook. Describe **forces, movement, and energy** in your own words based on what you have learned (Note: Younger students will “narrate” what they have learned. You may need to ask prompting questions to get younger students to begin to concentrate on the important topics in the reading assignments. Use the reproducible sheets to create a science notebook for writing/sketching important ideas).

Day 2 – read the assigned pages and describe and/or sketch what you learned in your science notebook. Define **gravity** using the *Forces and Movement* glossary.

Day 3 – Day 4 – read the assigned pages and describe and/or sketch what you learned in your science notebook.

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Week 2 – Gravity and Friction				
	Day 1	Day 2	Day 3	Day 4
The Young Scientists Club		Kit # 33 Forces Experiments 1-2 Teacher pg. 1 Student pp. 7-9 (begin at text box 2 on pg. 7, end after text box 4 on pg. 9)	Kit # 33 Forces Experiments 3-4 Teacher pg. 2 Student pp. 9-11 (begin at text box 5 on pg. 9, end after text box 1 on pg. 11)	
Forces and Movement	Pp. 18-19			Pp. 8-9
Optional	Investigate! Forces and Movement pg. 19			Investigate! Forces and Movement pg. 9

Supply List: *Young Scientists Club Kit #33*, large piece of cardboard or wood, glue, scissors

Assignments:

Day 1 – read the assigned pages and describe and/or sketch what you learned in your science notebook. Define **friction** using the *Forces and Movement* glossary.

Day 2 - Day 3 – complete the experiments and record your observations in your lab notebook (use the reproducible experiment page to create a lab notebook).

Day 4 – read the assigned pages and describe and/or sketch what you learned in your science notebook. Define **mass** using the *Forces and Movement* glossary.