Chapter Science Investigation Name _____

Keeping a Daily Exercise Log

What You Need

pen or pencil

What to Do

1. Set up an exercise log. Use one chart for each of the three weeks.
2. Each day, do a type of exercise that you like for 20–30 minutes or more. This can be playing school sports, walking, running, dancing, or any other kind of exercise that you like. You can do the same type of exercise every day, or you can try different things each day during the three-week period.

Find Out

Do this activity to see what muscles and bones your body uses each day as you exercise.

Process Skills

Communicating
Classifying
Interpreting Data

Time

- 20–30 minutes of exercise each day for three weeks
- 5–10 minutes to record data each day for three weeks
- 20 minutes to interpret data at the end of three weeks

3. After you finish exercising each day, **record** the type of exercise you did and amount of time that you spent doing the exercise. Then, **write** the names of the muscles and bones that you may have used during the exercise. You do not have to know the scientific names of the muscles and bones—just write the part of the body you used. (For example, "leg bones," or "arm muscles.")

4. At the end of three weeks, make a list to **identify** the names of each type of exercise that you did.

5. Make another list to identify all of the parts of your body that you used in these exercises. You may have used the same parts in many different exercises, but just write each part once in this list.

6. **Interpret the data** from these lists by figuring out all of the different muscles and bones you used during the three-week period.

Exercise Log			
Week:	**Type of Exercise**	**Length of Time**	**Muscles and Bones Used**
Day 1			
Day 2			
Day 3			
Day 4			
Day 5			

Conclusions

1. What muscles and bones does your body use to do your favorite kinds of exercise?
   Answers will vary based on the exercises performed.

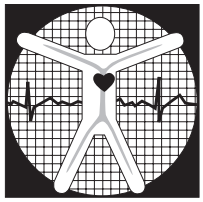
2. What kinds of exercise used the same muscles and bones?
   Answers will vary based on the exercises performed.

New Questions

1. Were there any muscles or bones that you did not use at all during your exercises?
   Answers will vary/No.

2. What muscle is your body using all the time, no matter what you are doing?
   the cardiac—heart—muscle and the muscles around the lungs

Name _____



ACTIVITY

Making Bones Steady

What do you **predict** you will have to do to each string to keep the straw steady?

Answers will vary. Students may correctly predict that they will have to pull the strings taut.

What happened as you and your partner pulled on the strings?

Students may mention that they were in a tug of war, or that each person had to pull with the same force to keep the straw steady.

Name _____

Conclusions

1. Compare your prediction with your observations.
Answers will vary based on predictions and observations.

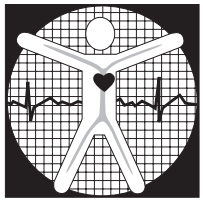
2. How do the strings pulling on the straw compare to muscles pulling on a bone?
The movement of the string caused the straw to move, just as muscle movement causes bones to move.

Asking New Questions

1. What would happen if you and your partner competed instead of working together?
One partner might move the strings faster than the other partner, and the straw would not be steady. The movement of the straw would not be controlled.

2. What advice would you give someone trying this activity for the first time?
Answers may include: move the strings smoothly and gently. Cooperate with your partner.

Name _____



ACTIVITY

Making Muscles and Bones Work Together

What do you **predict** will happen to the balloons when you try to straighten out the tubes?

Answers will vary. Students might think that the balloons will burst or tear loose from the tubes.

What happened to the balloons when you straightened out the tubes? **Draw** or **write** what happened.

Students should observe that the balloons stretched.

Try moving the tubes in different ways. **Draw** or **write** what happens to the balloons.

Answers will vary based on student observations.

Name _____

Conclusions

1. Compare your predictions with your observations.
Answers will vary based on students' predictions and observations.

2. What part of the body are the balloons like?
voluntary muscles

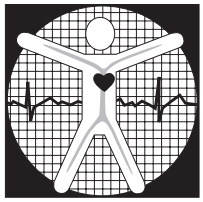
3. What part of the body are the tubes like?
bones

Asking New Questions

1. How are the tubes and balloons like bones and muscles?
The tubes are stiff and move up, down, and slightly sideways. The balloons are flexible and are able to contract and relax.

2. Is it possible to move the tubes without moving the balloons? Why or why not?
No, because they are connected to each other.

Name _____



ACTIVITY

Which Muscles Will Work?

In the "before" section of each box, **draw** a picture of yourself. **Draw** an arrow pointing to the muscles you think will work when you follow each direction.

What happened when you followed each direction?

Draw a picture of what happened in the "after" section of each box. **Draw** an arrow to the muscle that worked when you followed each direction. Compare your drawings to the drawings you made before you followed the directions.

Tug your ear.

Before	After

Slap your knee.

Before	After

Touch your opposite shoulder.

Before	After

Flap one arm like a wing.

Before	After

Name _____

Conclusions

1. What helped you predict which muscles would work?
Answers may include: remembering how body parts move, and that some muscles contract when others relax.

2. How do you think you might become better at predicting which muscles will work?
Answers will vary but may include: look in a reference book; practice.

Asking New Questions

1. How many muscles all together do you think were needed when you followed each direction?
All four directions involved use of sets of muscles in the hand and arm, at minimum.

2. How might you find out the names of the muscles you used?
Consult diagrams in this book and/or look in other reference materials in the library or on the Internet.

