DATE: NAME: CLASS:

GENERAL SCIENCE TOOLKIT

Estimating and Measuring

BLM G-8

Goal • Practise estimating measurements for science.

Introduction

Scientists and technologists work with precise amounts but sometimes find it useful to estimate. An estimate is more than a guess. You develop an estimate with the kind of consistent approach you take whenever you use a procedure in science and technology.

To obtain an estimate, you count or use a given number for a standard unit, then calculate for the total units. For example, a box has 12 sections. Nine sections are filled with 13 loonies each. The other 3 sections are almost full. Approximately how many loonies does the box contain? By estimating, you can determine that the box contains about 156 (12×13) loonies. It takes less time to calculate than to count all the loonies in the box.

What to Do

• Answer the following questions to practise estimating.

Questions

1. You are asked to fill a tub in your yard with water, using a 10 L container. After you pour in the first container of water, you see that the tub has 7 lines marked at approximately even intervals up one side and that the water you have put in it is about halfway up to the first line.

a. Estimate how many trips you will have to make to fill the tub: _____

b. Estimate the how many litres of water the tub holds: _____

2. Your school's cross-country ski champion is trying to better the record of 24 km raced during one season. Two races are held in each of the first three months of the year, with one final race in March. All races are 5 km. Last year, the first and final races of the season were cancelled because of poor conditions.

a. Estimate the month in which your school's champion could set a new record:

_____

b. Explain how: _____

3. A sign on an elevator says the maximum mass it will hold is 700 kg. Three large men, a woman, two teenagers, and you are in this elevator.

a. Do you think it is close to the maximum mass? _____

b. Explain your response.

_____

_____

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Estimating and Measuring

4. List some ways you can use estimating:

a. in science classes

b. in sports and games

c. at home

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