GENERAL

Estimating

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. Like any procedure in science, you use a consistent approach to develop an estimate.

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?

There are 9 sections filled with 13 loonies each. There are 3 more sections that are almost full. You know there are 9 + 3 = 12 sections in the box. You can estimate that the box contains 12 sections of 13 loonies each, or 12 × 13 = 156 loonies.
It takes less time to estimate this way than to count all the loonies in the box. You can sketch a diagram if it helps you estimate.

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 weight 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 weight?_____

   b. Explain your response.

   _____

   _____

4. List some ways you can use estimating:

    a. in science classes

      _____

      _____

    b. in sports and games

      _____

      _____

    c. at home

      _____

      _____