



# GRADE 3 SUPPLEMENT

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## Set D1 Measurement: Weight

### Includes

Activity 1: One-Pound Hunt

D1.1

Activity 2: Searching for Ounces

D1.3

### Skills & Concepts

★ identify concrete models that approximate standard units of weight

**Bridges in Mathematics Grade 3 Supplement**

**Set D1** Measurement: Weight

The Math Learning Center, PO Box 12929, Salem, Oregon 97309. Tel. 1 800 575–8130.

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*Bridges in Mathematics* is a standards-based K–5 curriculum that provides a unique blend of concept development and skills practice in the context of problem solving. It incorporates the Number Corner, a collection of daily skill-building activities for students.

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# Set D1 ★ Activity 1



## ACTIVITY

### One-Pound Hunt

#### Overview

Students find objects around the room that weigh about a pound. This activity is designed to give children a feel for this standard unit of weight.

#### Skills & Concepts

- ★ identify concrete models that approximate standard units of weight

#### You'll need

- ★ 3 pan balance scales
- ★ 3 one-pound packages of modeling clay
- ★ Work Places currently in use
- ★ Student Math Journals

#### Instructions for One-Pound Hunt

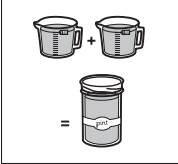
1. Show students one of the 1-pound boxes of clay. Explain that it weighs a pound. (You might also show them where and how the box has been labeled with its weight.) Then invite 3 volunteers to each lift the box of clay, feel how heavy it is, and find something in the room they think weighs about the same amount. Reassure students that they'll all have a turn to do the same thing in a little while.
2. When all the volunteers have returned, ask them to each use the balance scale to test the item they found against the box of clay. Explain that you're only looking for approximations today. The pans don't have to balance each other exactly; it's okay if one side is just a little heavier than the other.
3. If none of the objects approximate a pound, repeat steps 1 and 2 with three new volunteers. If none of them are able to find a single object that approximates a pound, ask another 3 students to find collections of several objects that weigh about a pound. Encourage them to find sets of identical objects, such as 2 full bottles of glue, 3 building blocks borrowed from the kindergarten classroom, or the like. Record any items or collections of items that approximate a pound on the whiteboard.
4. Then set the pan balance and the box of clay in a location easily accessed by all the students. Let them know that in a minute, you'll set up 2 more identical weighing stations elsewhere in the room. Have students choose partners, or assign pairs to work together. Explain that sometime during Work Places today, you will be asking each pair to do the following tasks at one of the weighing stations:
  - Pick up the box of clay to feel the weight of a pound.
  - Find something in the room (or a collection of like items) they think weighs about a pound.
  - Use the pan balance to check their work. Remind them that they only have to approximate a pound; they don't have to get the scale to balance perfectly. If the object or collection they found doesn't work, they'll need to keep searching until they find a single item or a collection of items that does.
  - Record what they found on the whiteboard.
5. When students understand what to do, send pairs out to Work Places. Set up the other two weighing stations, and then call on pairs to do the assigned tasks. Ask each pair to find another pair to take their place when they're finished.

**Activity 1** One-Pound Hunt (cont.)

6. Reconvene students near the end of the period. As a class, read the list of items they've recorded on the whiteboard. Then ask students to get out their math journals and find the listing for "pound" in the glossary at the back. In the space beside the picture, have them record at least one thing they've learned about a pound today and list at least 3 items that weigh about 1 pound.


Student Math Journal

**Measurement**



**pint (pt.)**

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**pound (lb.)**  
1 pound = 16 ounces

*A box of clay weighs a pound. A pound isn't very heavy. A bottle of water, or Mr. R's tape holder, or 2 full bottles of glue weigh about a pound.*

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**Extension**

- Repeat this activity with a kilogram instead of a pound. A kilogram weighs about  $2\frac{1}{4}$  pounds, so if you don't have standard kilogram weights, you can approximate a kilogram by placing  $4\frac{1}{2}$  cups of dry white rice in a re-sealable plastic bag.

# Set D1 ★ Activity 2



## ACTIVITY

### Searching for Ounces

#### Overview

Students find objects around the room that weigh about an ounce. This activity is designed to give children a feel for this standard unit of weight.

#### Skills & Concepts

- ★ identify concrete models that approximate standard units of weight

#### Recommended Timing

Anytime after Set D1 Activity 1

#### You'll need

- ★ 3 pan balance scales
- ★ 3 identical 1-ounce weights (see note)
- ★ a 1-pound box of modeling clay (see note)
- ★ 3 table knives
- ★ 3 plastic mats or paper plates
- ★ Student Math Journals
- ★ Work Places currently in use

**Note** If you have 3 standard 1-ounce weights, use them for this activity. If you don't, use 3 identical items of packaged food that each weigh 1 ounce. Examples of items weighing exactly 1 ounce include a package of instant oatmeal, a granola bar, or a package of gravy mix. Also, you will need a new, unopened box containing 4 sticks of clay.

#### Instructions for Searching for Ounces

1. Show students one of the 1-ounce weights. Explain that it weighs exactly an ounce. Then show them the box of clay, the table knife, and the cutting mat. Most students will probably remember from Activity 1 that the box of clay weighs 1 pound. Explain that there are 16 ounces in a pound, and 4 equal sticks of clay in the box. Challenge students to use this information to tell you how to cut a piece of clay that weighs about 1 ounce. Ask them to pair-share their ideas for a minute. Then call on volunteers to share their thinking with the class.

**Students** *If you cut all the clay into 16 pieces, each one would be about an ounce. We said if you take one of the sticks and cut it into 4 pieces the same size, they'd all be ounces.*

**Teacher** *How are you thinking about that, Roberto and Mandy?*

**Roberto and Mandy** *Well, there are four 4s in 16, right? So we said each stick must be 4 ounces. If you cut one stick in half and then in half again, we think you can get an ounce.*

2. Use students' suggestions to cut a piece of clay that weighs about an ounce. Then invite one of them to check your work by placing the 1-ounce weight on one side of the pan balance, and the piece of clay on the other. Add or subtract bits of clay if needed until the two sides balance.

3. When there's general agreement that the piece of clay weighs about an ounce, set the 1-ounce weight, the piece of clay, the pan balance, the table knife, and a new stick of clay in a location easily accessed by

**Activity 2** Searching for Ounces (cont.)

all the students. Let them know in a minute you'll set up 2 more identical weighing stations elsewhere in the room. Have students choose partners, or assign pairs to work together. Explain that sometime during Work Places today, you will be asking each pair to do the following tasks at one of the weighing stations:


- Pick up the 1-ounce weight and then the ball of clay to feel the weight of an ounce.
- Cut a piece of clay that weighs about an ounce, and use the pan balance to check.
- Find one other object, or collection of like objects (i.e., several linking cubes, several pattern blocks, or the like), they think weighs about an ounce.
- Use the pan balance to check their work. Let them know that they just have to approximate an ounce; they don't have to get the scale to balance perfectly. If the item or collection of items they found doesn't work, they'll need to keep searching until they find something that does.
- Record what they found on the whiteboard.

4. When students understand what to do, send pairs out to Work Places. Set up the other two weighing stations, and then call on pairs to do the assigned tasks. Ask each pair to find another pair to take their place when they're finished.

5. Reconvene students near the end of the period. As a class, read the list of items students have recorded on the whiteboard. Then ask students to get out their math journals and find the listing for "ounce" in the glossary at the back. In the space beside the picture, have them record at least one thing they've learned about an ounce today and list at least 3 items or collections of items that weigh about 1 ounce.

Student Math Journal


### Measurement



1 liter      2 liters

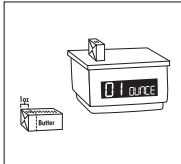
liter (l)

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meter (m)  
1 meter = 100 cm or 10 dm

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ounce (oz.)

There are 16 ounces in a pound. 5 dice, or 20 big paperclips, or 42 tiny wooden cubes weigh about an ounce.

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**Extension**

- Repeat this activity with a gram instead of an ounce. (A large paperclip weighs about 1 gram if you don't have access to standard gram weights.)