

Cube Weighing

Weigh plastic cubes using a digital scale to match weight combinations on printed cards.

Materials

- 1 storage bin
- 2 parts bins
- 1 weighing bin
- 200 yellow cubes
- 200 green cubes
- 1 digital scale
- 4 AA batteries
- 25 clear plastic slide-lock bags
- 1 plastic scoop
- 1 clear plastic snap box
- 48 printed cards:
 - 24 Level 2 cards
 - 24 Level 3 cards



Setup

Place the snap box with the cards on the table to the left. Place the two parts bins to the right of the card box with cubes of one color in each bin. Turn on the scale by pressing the ON button on the front of the scale. Be sure the scale is set to show weight in grams (see instructions included with the scale to adjust). Place the scale to the right of the two parts bins and put the small weighing bin on top of the scale. Lay the plastic slide-lock bags to the right of the scale. Set the scoop in front of the two parts bins.

Procedure

Level 1: One color – 20 to 48 grams

Setup: Select **one** blue-labeled Level 2 card and place it on the table. Set the snap box and other cards aside. Take the weighing bin off the scale and press the ON/TARE button. Once it reads 0g, replace the bin. When it reads the weight of the bin, press the ON/TARE button again to subtract the weight of the bin.

- Use either the scoop or fingers to select a color cube pictured on the card and place it in the weighing bin on the scale.
- Repeat until the scale reads the weight within 2 grams of the weight stated on the card.
- Take one of the slide-lock bags and slide the lock to open the bag.
- Pick up the weighing bin and dump the cubes into the bag. Place the card in the bag and slide the lock to close the bag.
- Place the bag in the red storage bin.
- Repeat until all the cubes are gone.

Level 2: One color – 20 to 48 grams

Setup: Select the blue-labeled Level 2 cards and place them in the open snap box at the left. Set the other cards aside. For the basic level, place the cards with picture of the cubes face up. For more difficulty, place the cards with the instructions face up. Take the weighing bin off the scale and press the ON/TARE button. Once it reads 0g, replace the bin. When it reads the weight of the bin, press the ON/TARE button again to subtract the weight of the bin.

- Take the top card from the box and place it on the table. Use either the scoop or fingers to select a color cube pictured on the card and place it in the weighing bin on the scale.
- Repeat until the scale reads the weight within 2 grams of the weight stated on the card.



Quality Criteria

The colored cubes in the bags must weigh within 2 grams of the total amount printed on the card.

- Take one of the slide-lock bags and slide the lock to open the bag.
- Pick up the weighing bin and dump the cubes into the bag. Place the card in the bag and slide the lock to close the bag.
- Place the bag in the red storage bin.
- Repeat until all the cards are gone.

Level 3: Two colors – 8 to 64 grams

Setup: Select the red-labeled Level 3 cards and place them in the open snap box at the left. Set the other cards aside. For the basic level, place the cards with the picture of the cubes face up. For more difficulty, place the cards with the instructions face up. Take the weighing bin off the scale and press the ON/TARE button. Once it reads 0g, replace the bin. When it reads the weight of the bin, press the ON/TARE button again to subtract its weight.

- Take the top card from the box and place it on the table. Use either the scoop or fingers to select a green cube and place it in the weighing bin on the scale.
- Repeat until the scale reads the weight within 2 grams of the weight stated on the card.
- Repeat these steps with the yellow cubes until the scale reads the weight within 2 grams of the TOTAL weight stated on the card.
- Take one of the slide-lock bags and slide the lock to open the bag.
- Pick up the weighing bin and dump the cubes into the bag. Place the card in the bag and slide the lock to close the bag.
- Place the bag in the storage bin.
- Repeat until all the cards are gone.

Variations with Cube Weighing

Other objects:

- Find other small, similar objects (like nickels, dimes and pennies). Cut paper small enough to fit in the bags and write or draw various coins on the paper. Assemblers weigh coins and write the total weight or money amount on the paper and place it with the coins into the slide-lock bags.

Disassembly

A different person should disassemble the task. In most cases, a task will need to be disassembled after each level is completed.

Setup

Place bins and supplies as in the assembly task.

Procedure - All Levels

- Take a slide-lock bag from the storage bin.
- Slide the bag open and remove the card, placing it in the snap box with the colored cubes facing up.
- Dump the cubes in the bag onto the table. Slide the lock to close the bag and place it flat to the right of the scale.
- Sort the cubes back into the appropriate parts bin.
- Repeat until all the bags are gone.