

S U M M A R I E S

INVESTIGATION 1: Exploring Weight and Balance

In Investigation One, you explored how weight and balance are related. During this Investigation, you:

1. built a beam balance using a meter stick and a wood block.
2. observed what happened when you placed objects on the beam.
3. learned how to balance the beam.

Through these experiments, you found that:

1. a beam balance consists of a beam and fulcrum.
2. when objects are placed on the opposite ends of a beam, the heavier object moves the beam downward and the lighter object moves the beam upward.
3. when objects of equal weight are placed on opposite ends of a beam, weight is evenly distributed and the beam is balanced.
4. weight is a property used to identify an object.
5. objects of unequal weights can be balanced by moving the heavier object toward the fulcrum or moving the fulcrum toward the heavier object.

INVESTIGATION 2: Investigating the Pan Balance

In Investigation Two, you explored the pan balance. During this Investigation, you:

1. compared the beam balance and pan balance.
2. learned how to equilibrate and operate a pan balance.
3. used a pan balance to compare different objects.

Through these experiments, you found that:

1. the pan balance compares the weights of objects.
2. the weight of some objects is greater than ($>$) or less than ($<$) the weight of other objects.
3. the weight of an object is not related to its size.

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INVESTIGATION 3: Examining the Weight and Volume of Solids

In Investigation Three, you explored whether solids of equal weight have equal volumes. During this Investigation, you:

1. used the pan balance to compare three different foods – oat cereal, sunflower seeds, and split peas – to ten gram cubes.
2. predicted which beaker of food would be the heaviest.
3. determined the volume of 10 g of each of the three foods and drew the results.
4. complete several statements.

Through these experiments, you found that:

1. ten gram cubes is equal to 10 grams of weight.
2. the peas had the least volume, the cereal had the greatest volume, and the seeds had a volume between the peas and cereal.
3. objects equal in weights may not be equal in volumes.

INVESTIGATION 4: Comparing Volume to Weight

In Investigation Four, you explored whether solids of equal volumes have equal weights. During this Investigation, you:

1. used the pan balance to compare 200 milliliters of cereal, peas, and seeds.
2. predicted which beaker of food would be the lightest and which would be the heaviest.
3. arranged the three foods on a scale from lightest to heaviest.

Through these experiments, you found that:

1. the peas were the greatest in weight, the cereal was the least in weight, and the seeds weighed more than the cereal but less than the peas.
2. objects equal in volume may not be equal in weight.

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INVESTIGATION 5: Exploring the Weight and Volume of Liquids

In Investigation Five, you explored whether liquids of equal volumes have equal weights. During this Investigation, you:

1. used the pan balance to compare several properties of three liquids – rubbing alcohol, vinegar, and water. Volume and how they look, feel, and smell were compared.
2. predicted whether liquids have weight.
3. compared equal volumes, 100 milliliters, of the three liquids.

Through these experiments, you found that:

1. found that liquids were equal in the properties of volume, how they looked, and how they felt. They all smelled differently.
2. the vinegar was the greatest in weight, the rubbing alcohol was the least in weight, and the water weighed more than the rubbing alcohol but less than the vinegar.
3. discovered that liquids also have weight.
4. liquids equal in volume may not be equal in weight.