

Name _____

Physical Weathering - Student Worksheet

Weathering is the **destructive** process by which rocks are broken into smaller pieces whereas erosion occurs when these small pieces are moved away from the parent rock.

Weathering can be due to:

1. **Physical processes** - Heat, cold and impact
2. **Chemical processes** - Dissolving and depositing
3. **Biological processes** - Living things

Physical weathering due to cold temperatures.

Rock itself is not much affected by cold temperatures but any water trapped in cracks or pores in the rock will expand and force the pores and cracks apart. This is called "frost wedging"

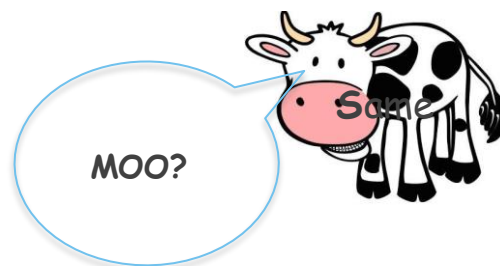
Good scientific data is observable and measurable.

To ensure this is a "**Fair test**" we have to ensure **Cows Moo Softly**

Change one thing
Measure one thing
Everything else **S**tays the

Materials per group

- Permanent marker or masking tape
- Ruler



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- Two empty clean cool drink bottles
- Water
- Freezer
- Option - calculator

Method

1. Fill both bottles with water to a height of 10 centimetres, and write your group name on the base of each.
2. Place one bottle in the freezer overnight and leave the other in your classroom. The bottle in the classroom is the **CONTROL** against which any change due to freezing can be measured. This bottle is the **same** as the experimental bottle but will not be frozen. The bottle to go in the freezer is the **EXPERIMENTAL** bottle.

Predict what you think will happen after the bottle has been in the freezer overnight

3. The next day remove the bottle and measure the height of the ice in the bottle.

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Observations

What was the **one** thing we changed? _____

What was the **one** thing we measured? _____

Did everything else stay the same? _____

Is this a "Fair Test?" _____

What happened to the water level in the frozen bottle?

What was the original height of water before freezing? _____

What was the height after freezing? _____

What fraction of the original height is this increase?

$$\frac{\text{Increase in height}}{\text{Original height}} = \frac{\quad}{\quad}$$

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Extra for experts

If we had doubled the amount of the water in the experimental bottle would the fraction of increase be twice as much?

Discussion

Water is the only liquid that expands when it gets cooler. How can trapped water freezing break up rocks for building stone?

