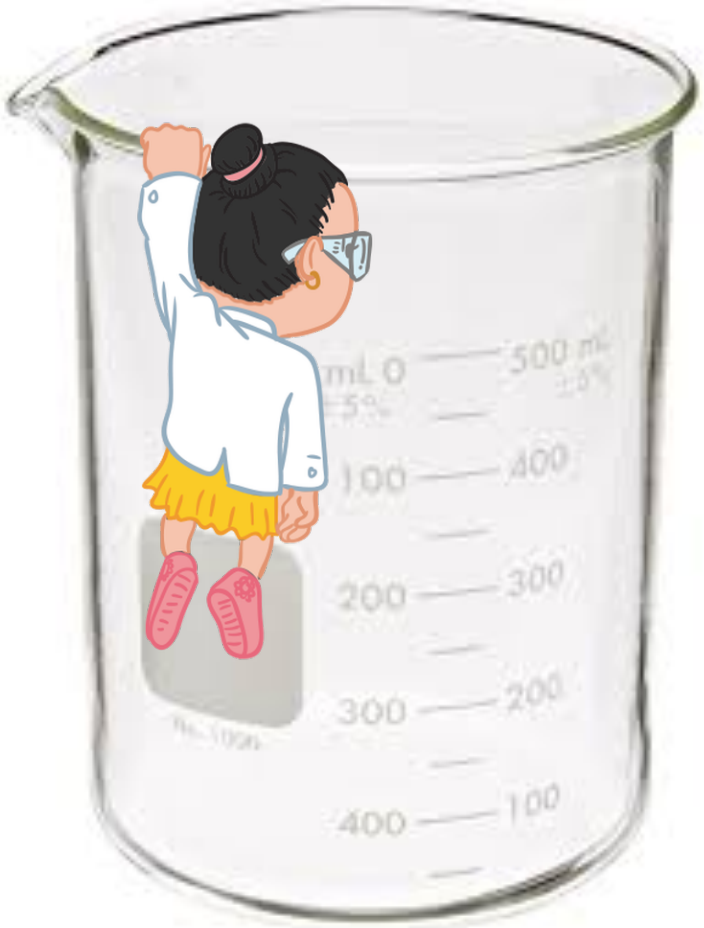
Investigating Mixtures

ACTIVITY 1: Mixing solids

MATERIALS for class:

- 500g bag of barley (beans or lentils will also do)
- 500g bag of rice
- Small packet of sugar
- Clean white beach sand
- Plastic spoons for scooping
- 250mL Beakers
- Sieves (the type used for sieving flour)



PROCEDURE (Part 1):

1. Place 5 spoons of barley in the beaker.
2. Place 5 spoons of rice in the beaker.
3. Stir the barley and rice until they are mixed.
4. Answer the questions below.

QUESTIONS:

1. Can you still see the individual rice and barley grains?

2. Take a photo of the mixture and add arrows to identify the grains. Insert here ⬇️.

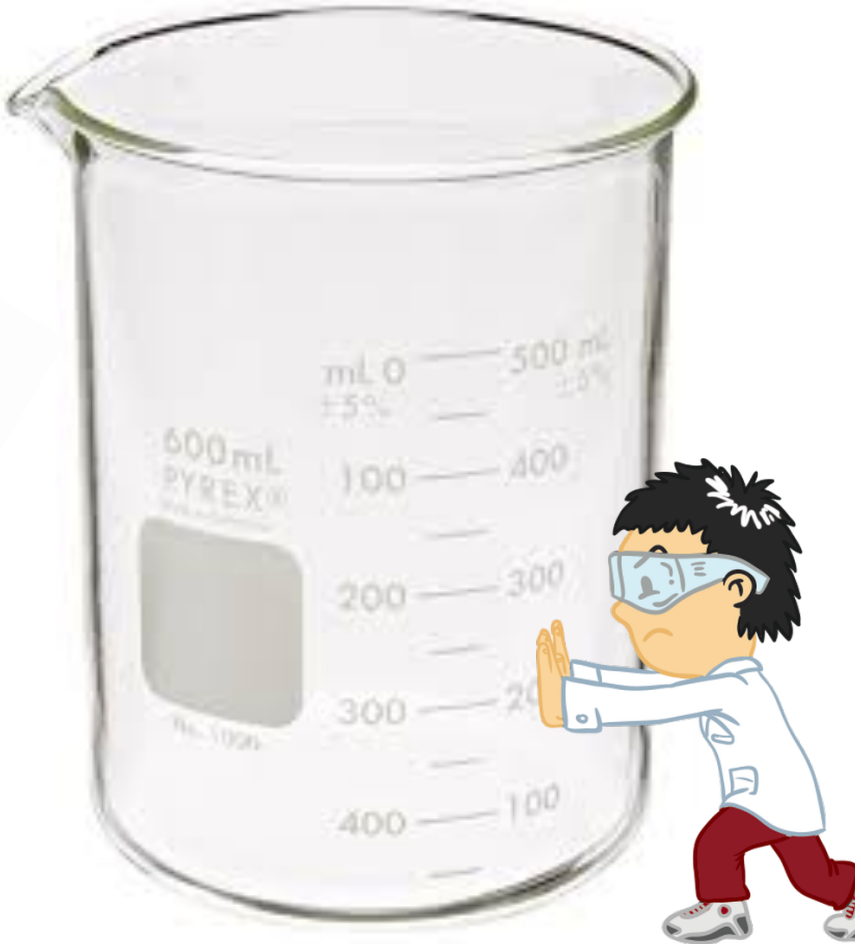
3. Separate the mixture into a pile of rice grains and a pile of barley grains.

4. Write a description to explain how you separated the mixture.

5. Did the barley and rice grains change in any way, or do they still look the same as before they were mixed?

INSTRUCTIONS (Part 2):

1. Place 5 spoons of rice in the beaker.
2. Place 5 spoons of sugar in the beaker.
3. Stir the sugar and rice until they are mixed.
4. Answer the questions below



QUESTIONS Part 2

1. Can you still see the individual rice and sugar grains?

2. Take a photo of the mixture and insert here.

3. **Separate the mixture into a pile of rice grains and a pile of sugar grains.**

4. Write a description to explain how you separated the mixture.'

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5. **Can you think of a quick way to separate the mixture, using a sieve?**

a) Describe what you would do to separate the mixture.

b) Describe what would happen to the mixture.

6. Did the sugar and rice grains change in any way, or do they still look the same as before they were mixed?

INSTRUCTIONS (Part 3):

1. Place 5 spoons of sugar in the beaker.
2. Place 5 spoons of white sand in the beaker.
3. Stir the sugar and sand until they are mixed.
4. Answer the questions below.

QUESTIONS:Part 3

1. Can you still see the individual sand and sugar grains?

2. Take a photo of the mixture and insert here.

3. Can you separate the mixture into a pile of sand grains and a pile of sugar grains?

4. Do you think that it would be possible to separate the mixture using a sieve? Why do you think so

ACTIVITY4 : Mixing a solid and a liquid

MATERIALS for class:

- Clean white beach sand
- Plastic spoons for scooping
- 250mL Beakers
- Sieves (the type used for sieving flour)
- kitchen towel or paper towel

INSTRUCTIONS:

1. Place 5 spoons of sand in the beaker.
2. Pour water into the beaker until it is half-full.
3. Stir the sand and water until they are mixed.
4. Answer the questions below.

QUESTIONS:

1. Can you still see the individual sand grains?

2. Take a photo of the mixture and insert here.

3. Can you separate the mixture into a pile of sand grains and water?

4. How long would it take if you picked the sand grains out of the water one by one?

5. Would it be possible to separate the sand from the water using the sieve? Say why or why not.

5. Would it be possible to separate the sand from the water using the paper towel? If you think it would be possible, explain what you would do.

6. Do you think it would be possible to separate sugar and water in the same way (by filtering the mixture through a towel)? Say why or why not.

ACTIVITY 5 : Mixing liquids

MATERIALS for class:

- water
- cooking oil
- plastic spoons for scooping
- 250mL Beakers

INSTRUCTIONS:

1. Place 100 mL of water in the beaker.
2. Place 10 spoons of cooking oil in the beaker.
3. Stir the oil and water until they are mixed.
4. Let the mixture stand for a few minutes, then answer the questions below.

QUESTIONS:

1. Did the liquids mix? Describe what the mixture looks like.

2. Take a photo of the mixture and insert here.

3. Do you think it would be possible to scoop all the oil out of the water? How long do you think it would take?

4. Would it be possible to separate the liquids using a sieve or a filter? Say why or why not.

5. Can you think of another way to separate the mixture into oil and water? If you think it would be possible, explain what you would do

6. Do you think it would be possible to separate a mixture of juice and water using any of the methods that we have used so far? Say why or why not