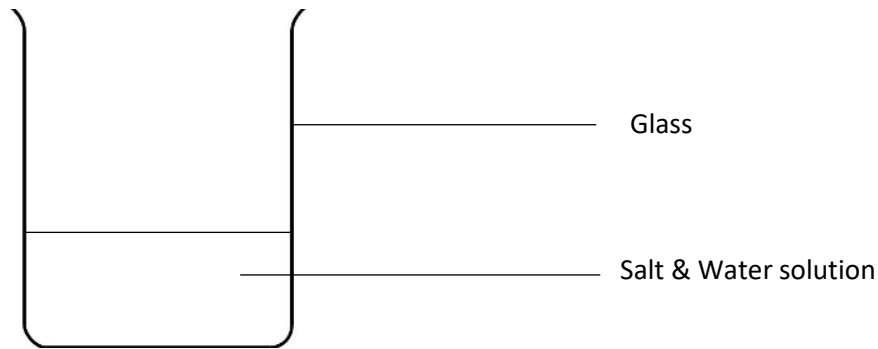
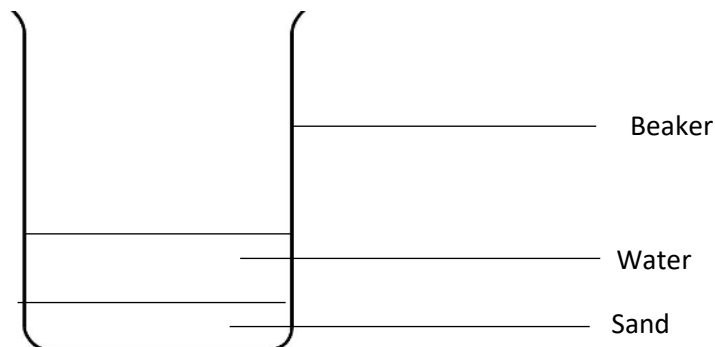


**Activity 2 (Solutions)**

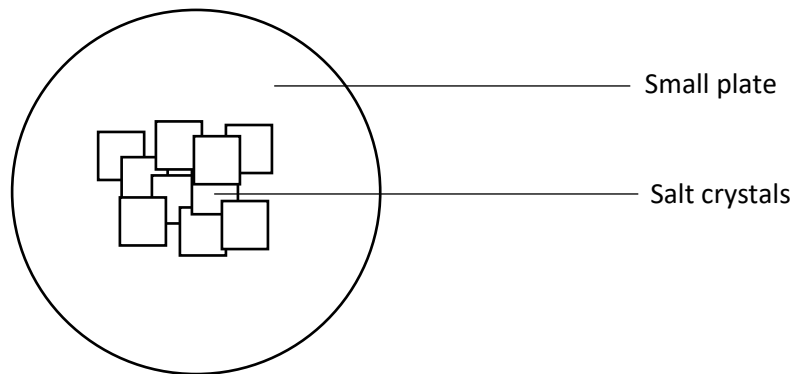
1. Aachal mixed four teaspoons of salt with water in a glass.
  - a. **Draw and label the *results*** of her investigation. Give your drawing a heading.

**Water and Salt Mixture**

2. Sarah mixed four teaspoons of sand with water in a glass.
  - a. **Draw and label the *results*** of her investigation. Give your drawing a heading.

**Water and Sand Mixture**

3. Write a statement about which of these is a solution and why.  
**The salt and water mixture done by Aachal is a solution because the salt has dissolved in the water and we can no longer see the two substances that make up the mixture.**

**PRACTICAL Activity 3 (Crystallisation)**1. Materials:**Teaspoon****Salt****Water ( $\frac{1}{2}$  a cup)****Glass/cup**2. Instructions:a. **Mix 3 teaspoons of salt with  $\frac{1}{2}$  a cup of water and mix.**b. **When the salt has dissolved. Take a small plate and pour the solution.**c. **Leave the solution on the windowsill for a few days and check how it looks once all the water has evaporated.**5. **Draw and label** the **results** of the investigation. Give your drawing a **heading**.**Crystallised salt****The water has evaporated and left behind the solid salt particles which have formed crystals**

**NS Tech Practical**

**PRACTICAL Activity (Soluble and Insoluble Substances)**

**Materials:** 4 glasses/cups, teaspoon, water, salt, mielie meal, sand, sugar

1. Predictions

Look at the 4 substances: salt, mielie meal, sand, sugar.

Write which substances do you think will be soluble and insoluble in water?

**Any predictions will do**

2. Make the following mixtures and stir:

- a) 1/2 cup Water and Salt (1 Teaspoon)
- b) 1/2 cup Water and Sand (1 Teaspoon)
- c) 1/2 cup Water and Mielie meal (1 Teaspoon)
- d) 1/2 cup Water and Sugar (1 Teaspoon)

**Instructions:**

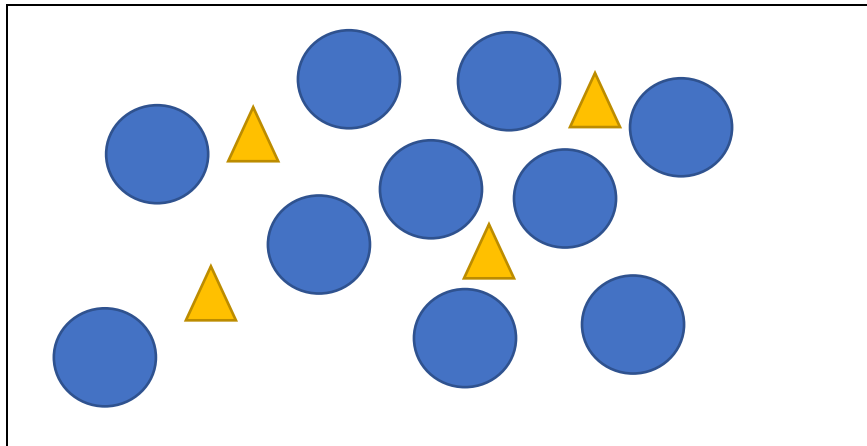
- i. **Pour 1 teaspoon of the solid into 1/2 a cup of Water and stir**
- ii. **Wait for a few seconds and observe the mixture**

**Results:**

3. Draw pictures to show each mixture (Remember to Label and the Heading).

<p>a) <b><u>Water and Salt Mixture</u></b></p> <p style="text-align: right;">Glass</p> <p style="text-align: right;">Salt &amp; Water solution</p>	<p>b) <b><u>Water and Sand Mixture</u></b></p> <p style="text-align: right;">Glass</p> <p style="text-align: right;">Water</p> <p style="text-align: right;">Sand</p>
<p>c) <b><u>Water and Mielie meal Mixture</u></b></p> <p style="text-align: right;">Glass</p> <p style="text-align: right;">Water</p> <p style="text-align: right;">Mielie meal</p>	<p>d) <b><u>Water and Sugar Mixture</u></b></p> <p style="text-align: right;">Glass</p> <p style="text-align: right;">Sugar &amp; Water solution</p> <p>e)</p>

Draw a particle diagram showing sugar and water mixture and another to show mielie meal and water. **Use 10 particles of water and 4 particles of the solid**



**Must be an irregular shape, particles not too close and not too far from each other**

- f) Suggest methods we can use to separate each mixture.
- Water and Salt – **Crystallisation**
  - Water and Sand – **Settling, Decanting or Filtering**
  - Water and Mielie meal - **Filtering**
  - Water and Sugar - **Crystallisation**

### Conclusion

- g) Were your predictions correct? Answers are dependent on the predictions  
 Salt – **soluble**, Sand – **insoluble**, Mielie meal – **insoluble**, Sugar - **soluble**
- h) What can you say about substances that are soluble or insoluble in water?
- **Not all substances are soluble in water**
  - **Salt and sugar are soluble in water**
- i) Which substances would you say is a solution and why?  
**Salt and water & sugar and water, because after mixing them you can no longer see the different substances that make the mixture? The solid dissolves into the liquid and we can no longer see it.**
- j) In **mixture A**, which substance would you say is the **solute** and **solvent**?
- Solute – Salt**  
**Solvent – Water**