



مدرسة القديسة مريم الكاثوليكية الثانوية – دبي
ST. MARY'S CATHOLIC HIGH SCHOOL, DUBAI

Lesson Plan

Subject	Science
Class/ Section	Year 7 ____
Week	Week 5 (26 th September– 30 th September)
Work send to students by	Google classroom
Total number of lessons per week	4
Unit/Topic	7G - The particle model
Key Vocabulary	Hypothesis, Predictions, Theory, Density, soluble, solute solvent,
<u>Learning objectives</u>	Lesson 1 Explain what evidence allowed all scientists to accept the particle model.
<u>Specific Intended Learning Outcomes</u>	State the Brownian motion. Explain how Brownian motion supports the particle model. Explain how scientific theories evolve. Convert between nanometers and meters.
Tasks	1. Students watch part of the AL video Brownian motion with no sound. They are then asked to think about and describe what they are seeing. This should be a brief introduction to what Brownian motion is – not what causes it. Use the AL interactive Explaining Brownian motion and ask students to explain Brownian motion by

	<p>selecting what it shows evidence of in liquids and gases. Ask the children to do question 3& 7 to explain Brownian motion.</p> <p>2. Show students the picture of some undiluted orange squash in one glass and the same volume of a more diluted orange squash in another glass. Ask students to come up with a scientific question about the two glasses, a hypothesis, a prediction and a way of testing the hypothesis/prediction. Possible answers: Why does one squash appear paler than the other? The colour of the squash depends on the amount of water added. If I add water to the darker squash, then it will become paler. I would add water to the squash. Show students dilution and remind them that the particle theory explains what is happening in terms of mixing particles of squash with particles of water. This explains why the two colours mix together rather than stay separate. Ask students to answer question 4 &5 in their book.</p> <p>3. Introduce ideas of units and scales (Note °C is not an SI unit and joules, volts, pascals, watts, hertz and newtons are all derived units.) Then show students that $1\ 000\ 000\ 000\ \text{nm} = 1\ \text{m}$ and $1\ 000\ 000\ \text{nm} = 1\ \text{mm}$. /The AL presentation Comparing sizes.Students then complete Worksheet 7Gc-5 to practise interconverting units including the nanoscale: metres to millimetres, micrometres and nanometres. The AL interactive Units of measurement asks students to convert measurements and match the answers to the questions. Ask students to answer question 6 in their book.</p> <p>4. Homework:7Gc6 worksheet</p>
<p>Assessment Criteria/ Essential questions</p>	<p>Support Question 1 & 2 helps the children to explain the Brownian motion.</p> <p>Stretch Question 3-6 in the students' books helps them to Compare sizes and explain Brownian motion.</p> <p>Extend Question7 /pg 109 in the student's book help them to explore the Brownian motion.</p>
<p>Resources</p>	<p>Exploring science book 7, AL video states of matter/ power point, Doodle PPT on scientific investigation.</p>

<p><u>Specific Learning objectives:</u></p>	<p><u>Lesson 2:</u></p> <p>Why do some things spread out?</p>
<p><u>Specific Intended Learning Outcomes:</u></p>	<p>Recall some everyday examples of diffusion.</p> <p>Explain how diffusion occurs in terms of movement of particles and their movement from higher concentration to lower concentration.</p> <p>Explain why the speed of diffusion in gases is faster than in liquids.</p>
<p><u>Tasks:</u></p>	<ol style="list-style-type: none"> 1. The AL animation Diffusion and the particle model shows animated versions of diffusion in liquids and gases. After showing students this animation, the AL interactive Diffusion, asks students to sort the states of matter into order according to the speed at which their particles diffuse. 2. Encourage the students to read aloud the particle theory /textbook page 110-111 and check their understanding by asking them to write answers to textbook questions 1-4 in their notebook. 3. Let the students explore the images C , D & E on Pg 111 to understand how diffusion occurs in solid, liquid and gases. 4. Do question Number 5-7 to explain why the speed of diffusion in gases is faster than in liquids. <p>Worksheet 7Gd9 - Homework</p>
<p><u>Assessment Criteria/ Essential questions:</u></p>	<p>Support Question 1 & 2 helps the children to understand diffusion.</p> <p>Stretch Question 4 in the students' books helps them understand how diffusion occurs in terms of movement of particles and their movement from higher concentration to lower concentration.</p> <p>Extend Question 5-7 in the student's book helps them to analyze the diffusion process on the basis of particle theory.</p>
<p><u>Resources:</u></p>	<p>Exploring science book 7, AL video particle theory/ Doodle power point.</p>

<p><u>Specific Learning objectives:</u></p>	<p><u>Lesson 3 & 4:</u></p> <p>What is air pressure?</p>
<p><u>Specific Intended Learning Outcomes:</u></p>	<p>Describe how moving gas particles cause pressure when they hit the walls of their container.</p> <p>Recognise some effects of pressure (e.g. blowing up a balloon).</p> <p>Explain that more particles in a container will cause a greater pressure.</p> <p>Explain the ways in which gas pressure can be increased (more particles introduced into a container, container is made smaller).</p> <p>Describe what a vacuum is.</p> <p>Explain some of the effects of air pressure (e.g. using a straw, collapsing can).</p>
<p><u>Tasks:</u></p>	<p>1. The AL interactive Different pressures ask students to sort three cans filled with gas in order of increasing pressure. Discuss with students what it would feel like if they were out in a hail storm with small hail stones. Then ask them to say what it would feel like if more hail stones fell over the same time period. Elicit the idea that they would feel more pressure on their heads and link this to the idea of gas particles hitting the walls of a container. Encourage the students to write answers to textbook questions 1-3 in their notebook.</p> <p>2. The AL animation Air pressure explains how particles exert pressure. The AL presentation Things that rely on pressure gives students the opportunity to explore gas pressure in various objects. Encourage the students to write answers to textbook questions 4-7 in their notebook.</p> <p>3. 7Ge-2 is the sheet covering the specific intended learning outcomes. Encourage students to complete the worksheets. Students will be put in break out rooms during Zoom lesson to encourage collaborative learning.</p>

<p><u>Assessment Criteria/ Essential questions:</u></p>	<p>Support Question 1 & 2 helps the children to understand air pressure.</p> <p>Stretch Question 4 in the students' books helps them to explain some of the effects of air pressure</p> <p>Extend Question 5-7 in the student's book helps them to describe the cause of gas pressure using particle theory.</p>
<p><u>Resources:</u></p>	<p>Exploring science book 7, AL video AL interactive Different pressures & Air pressure / Doodle power point.</p>