

Explorers Education Programme™



Date	Class level 5 th and 6 th Class	Subject Mathematics / Science
Strand Measures, Shape and Space Living Things/ Energy and Forces	Strand Unit Area, Capacity and Money Processes of life, how electrical appliances work	
Objective(s) The aim of this lesson plan is for students to design a fish tank / aquarium exhibit. The students will compare tank sizes and shapes. They will consider what type of living thing will be placed in the tank and compare size ratios of the tank to the animal. They will consider the cost of the tank/ exhibit and the equipment which they will need. They will present their designs to the class.		
Skills Required Applying and problem solving, comparing, reasoning, estimating and measuring, recording and communicating. Design and Make- exploring and planning,		
Learning objectives The child should be enabled to: Discover that the area of a rectangle is length by breadth Estimate and measure capacity using appropriate metric units Compare 'value for money' using unitary method Become aware of some of the basic life processes in animals and plants Become aware of how some common electrical appliances work	Learning activities Talk and Discussion: Talk to your students about aquarium and fish tanks. Have any of the students visited an aquarium, or kept a fish tank at home? What type of animals did they see? What were the tanks like? Can they think of things which would be important for the animals to stay alive? Is the size or shape of the tank important in the design? Hands on Approach: Group Work/Pair Work: Working as individuals/ pairs or small groups ask students to make a list of things that are important for animals to stay alive? Ask them to consider what type of animal that would like to design a tank/ display for? Once students have selected their animal they will need to resource some of the animal's basic life processes: Where does it live? Freshwater/ Saltwater, in water and on land? What size it grows to? What is its maximum size? Where does it like to rest? On the bottom, floating in water, on rocks, in vegetation? What does it eat?	



	<p>Does it live at a group or is it solitary? Is it Dangerous? Is it territorial? Does it build a nest, need a place to shelter?</p> <p>Planning and Exploring Using this information, students can begin to design their tank. They should consider the following: The shape and size (length, width and depth) of the tank? The quantity and type of water? The vegetation/ shelter, other materials such as stones/ rocks to place in the tank? How many animals will live in it? How many types of animals will live in it? What equipment will be needed; lights, air pumps, filter, heater, the tank, food? What is the cost of the equipment? Do they have a budget?</p> <p>Resources Computer with internet access Nature books with information about aquatic animals Paper Pencils Images of aquatic animals and plants Price list of aquarium equipment (attached)</p>
<p>Differentiation Differentiate group activities and roles to take account of individual needs. Mixed ability pairs. Assign different tasks.</p>	
<p>Assessment Oral feedback from children, teacher observation, and pupil work samples.</p>	
<p>Linkage and Integration English – Writing: Ask students to write a design template explaining the features of their exhibit/ design and give reasons for the design. New Words List. Science – Living Things: Visit a local pet shop or aquarium to view aquatic animals and talk to aquarists about what they need to stay alive. Environmental awareness and care: Where will they source their animals from? Check the ICUN red list to make sure they are not endangered or threatened with extinction. Geography: Caring for the environment. Check out the ICUN red list to make sure your chosen species is not endangered or threatened with extinction. Art – Construction: Ask students to build a model of their exhibit using recycled boxes, cardboard and paper.</p>	

Equipment	Price	Equipment	Price
Tank 	15 Litre- €20	Plants (Fake) 	€3
	20 Litre - €30		
	40 Litre - €40		
Air Pump 	Small: €35	Plants (Live) 	€6
	Medium: €40		
	Large: €46		
Filter 	Small: €25	Nets 	Fine:€2 Course:€3
	Medium: €31		
	Large: €40		
Light 	Small:€22	Fish Feed 	€4
	Medium: €32		
	Large: 27		
Heater 	Small:€20	Siphon 	€8
	Medium:€30		
	Large: €40		
Gravel (Plain) 	€25 per 10 kg	Gravel (Decorative) 	€5 per 2 Kg
Other Items you could cost: Water treatments, ornaments, animals.			