



Year 2, Term 3 - Vehicles

<p>This unit builds on children's experiences of joining and combining sheet and reclaimed materials and of using moving joints. They learn about wheels and axles and how to use these when making wheeled vehicles for a specific purpose. They are encouraged to develop their design ideas based on investigating vehicles in the world around them. Work in this unit also offers opportunities to use construction kits, and computer generated graphics or text to enhance their finished products and to apply basic measuring skills.</p> <p>This unit could be adapted and based on other wheeled products e.g. <i>service vehicles (fire engine, tip-up truck, milk float, ambulance), carnival float, prams and buggies, wheelchairs, shopping trolleys, wheelbarrows</i>. The main features of the particular vehicle would be the purpose of the product.</p>	<p>Vehicles</p> <p>Vocabulary Children will use words and phrases relating to:</p> <ul style="list-style-type: none"> • designing e.g. <i>purpose, ideas, discuss, explore, predict, guess, survey, table, Venn diagram, most/least common</i> • making e.g. <i>joining, combining, connecting, testing, punching</i> <p>knowledge and understanding e.g. <i>vehicle, wheels, chassis, axles, doweling, hole punch, logo, distance</i></p>
<p>Learning Intentions</p>	<p>Investigate, Disassembly and Evaluate</p>
<p>Children should learn:</p>	<p>Activities</p>
<ul style="list-style-type: none"> • That there are many types of vehicles • That vehicles have different purposes • That vehicles are made up of different parts • That ideas for their own designs can be obtained by looking at familiar products • To make simple drawings and label parts 	<p>Provide opportunities for children to examine vehicles e.g. <i>lorries, prams, cars, vans, ambulances, caravans, fire engines, tractors, buses, carnival floats</i>.</p> <p>Discuss with the children the different features of the vehicles, e.g. <i>Why do vehicles have wheels? Do they all have the same number and size of wheels? Why are vehicles different shapes? Which vehicles have parts that move, light up or make a noise?</i></p> <p>Ask the children to identify the different parts of vehicles – wheel, axle, chassis, body, and cab.</p> <p>Children could make simple freehand drawings of vehicle and label parts appropriately.</p>



	Vehicles
Learning Intentions	Activities
Children should learn:	Focused Practical Tasks
<ul style="list-style-type: none"> • To use wheels and axles, understanding that wheels and axles can be assembled in two different ways: <ul style="list-style-type: none"> – either the wheel is attached tightly to the axle and the axle is free to rotate, or – the axle is fixed with the wheel free to rotate around it • To apply rules which will control risk when using materials, tools and equipment • To use hand tools safely and appropriately <p>To choose and use appropriate finishing techniques</p>	<ul style="list-style-type: none"> ▽ Ask the children to practise joining wheels and axles to allow movement. ▽ The children could try out different ways of making axle holders <i>e.g. using clothes pegs, punched holes in card or boxes, using large drinking straws.</i> ∅ The children could try out different finishing techniques <i>e.g. collage, paint, and cut out shapes to stick on, computer-generated graphics or text to print out and stick on.</i> <p>Using pictures from books or magazines ask children to describe a vehicle and the type of person who would drive it. Concentrate on the character of the person. They could then design a vehicle for a person they know.</p>
	<p>Class management</p> <ul style="list-style-type: none"> • This unit is demanding with significant amounts of taught knowledge and skills. Children will need to be shown the different assembly techniques for wheels and axles. Teachers may wish to demonstrate both these methods but concentrate on one. Working models of construction techniques are valuable. It is important to have supplies of wheels, axles and framework materials for making the vehicle. Construction kits will be valuable in showing principles. <p>Children will have ideas beyond their making skills in some cases. Careful judgements need to be made which do not curtail their creativity.</p>



Design and Make Assignment	
To design and make a wheeled vehicle for a purpose	Activities
<ul style="list-style-type: none">• To identify a purpose for what they intend to design and make• To develop their design ideas through discussion, observation and drawing• To measure and cut accurately• To assemble, join and combine materials in order to make a vehicle• To evaluate against their design criteria• To explore how the vehicle can be made more stable.	<p>Discuss what the vehicle is designed for e.g. <i>to carry things such as an animal or postal deliveries. Why is it needed to carry things? What other functions does it have?</i></p> <p>Encourage the children to consider type and size of vehicle, size and number of wheels, how it might be finished, and what extras to add.</p> <p>Ask the children to decide what their vehicle will include – set the design criteria and record them.</p> <p>Encourage the children to collect everything they will need including tools and joining components. <i>What will you need? What materials will work well for this? How much do you need? What else can you use?</i></p> <p>Provide opportunities to create different labels or logos for the vehicle. Discuss the order in which the children will do things.</p> <p>Encourage the children to evaluate against their design criteria.</p>
	Health and safety
	<p>When carrying out a risk assessment for this activity, teachers will need to consider the materials, tools and equipment being used.</p> <p>In addition, the following points should be noted:</p> <ul style="list-style-type: none">• the use of simple jigs can reduce health and safety risks with some processes <i>egg cutting and drilling</i>• ensure appropriate adhesives are used