Moving Toys	Art, Design and Technology	Years 5 & 6, Term 3	Year B

Key vocabulary: rotating parts, passengers, structure, mechanism, components, motor, switch, battery, cell, wire, circuit, axle, belt, driver, pulley, follower, prototype, frameworks, diagonals, beams, reinforce, product, joins

Knowledge and skills:

Create prototypes to show their ideas. (CD2)

Produce step by step plans to guide their making, demonstrating that they can apply their knowledge of different materials, tools and techniques. (CD3)

Make careful and precise measurements so that joins, holes and opening are in exactly the right place. (CD5)

Build more complex 3D structures and apply their knowledge of strengthening techniques to make them stronger or more stable. (CD6)

Understand how to use more complex mechanical and electrical systems. (CD7)

Know some of the work of Stephenson. (CD9)

Use Year 5/6 vocabulary: design brief, user, purpose, design specification, mock up, prototype. (CD10)

Name the rotating parts of a ride. Explain how they think a ride is powered and built. Know that motors can be attached to an axle which in turn can be attached to a rotating part. Know that pulleys and belts can be used to change the movement that the motor creates. Know that a pulley is a disc which has a groove all the way round it which a rope or belt can be fed through and that the pulley can be turned by an axle through the middle. Know that the pulley powered by a motor which is called a driver. Know that the belt can turn another pulley which is the follower. Know that diagonals in a frame will keep it upright and make it sturdy. Know that beams across shapes will help to reinforce them and keep the object the same shape.

Possible activities:

Investigate different fairground rides. Sketch and label the rotating parts.

Create a circuit that would power a fairground ride with a motor and use a motor, pulley and belt.

Create and reinforce a framework for a fairground ride.

Spiritual, Moral, Social and Cultural Education and Promotion of British Values:

Spiritual: Children will use their imagination to create a design for their own fairground round.

Moral: Children will think about how the materials they use can be shared and re-used.

Social: Children will study different fairground rounds and will think about how they will make a ride that will appeal to consumers. Children will share tools and support each other when evaluating.

Cultural: Children will consider the history of fairgrounds in our society.

British values: Children will show respect for each other's thoughts and ideas.

Equality and diversity: Children will consider how rides can be made accessible to all people.