Government of **Western Australia**
School Curriculum and Standards Authority

Sample assessment task	
Year level	2
Learning area	Technologies
Subject	Design and Technologies: Engineering principles and systems
Title of task	Top spin!
Task details	
Description of task	Children will research and design a spinning top that is made out of familiar products.
Type of assessment	Formative
Purpose of assessment	To inform progression of learning To give the students experience in designing and making a model
Assessment strategy	Observations and self-assessment
Evidence to be collected	Design, list of materials, photographic and oral evidence of steps taken and final product
Suggested time	2 x 1 hour lessons
Content description	
Content from the Western Australian Curriculum and Assessment Outline	***Knowledge and understanding*** **Engineering principles and systems** Forces create movement in objects ***Processes and production skills*** **Investigating and defining** Explore design to meet needs or opportunities **Designing** Develop, communicate and discuss design ideas through describing, drawing, modelling and/or a sequence of steps **Producing and implementing** Use components and given equipment to safely make solutions **Evaluating** Use simple criteria to evaluate the success of design processes and solutions **Collaborating and managing** Work independently, or collaboratively when required, to organise information and ideas to safely create and share sequenced steps for solutions
Early Years Learning Framework (EYLF)	**Outcome 4: Children are confident and involved learners** 4.2 Children develop a range of skills and processes such as problem solving, inquiry, experimentation, hypothesising, researching and investigating 4.3 Children transfer and adapt what they have learned from one context to another

Connected Curriculum	***Science*** ***Science understanding*** **Physical Sciences** A push or a pull affects how an object moves or changes shape ***Science inquiry skills*** Evaluating Compare observations with those of others ***Humanities and Social Sciences*** ***History*** The past in the present - The impact of changing technology on people's lives (e.g. at home, work, travel, communication, leisure, toys) and how the technology of the past differs from what is used today
Task preparation	
Prior learning	Students have prior knowledge of the physical science concepts of force and how push or pull affect objects. Students have explored changes in technology with reference to toys.
Assessment differentiation	Teachers should differentiate their teaching and assessment to meet the specific learning needs of their students, based on their level of readiness to learn and their need to be challenged. Where appropriate, teachers may either scaffold or extend the scope of the assessment tasks.
Assessment task	
Assessment conditions	Whole-class discussion Individual student exploration and completion of activity
Resources	• Internet access, large screen • Assortment of objects for making spinning tops (skewers, pencils, elastic bands, playdough, cardboard) • A4 paper to plan and design the spinning top, pencils • Device for photographing final product • Self-evaluation paddles: 1 = unhappy (red), 2 = happy (blue), 3 = very happy (green). Use coloured pop-sticks as an easy option.

Instructions for teacher

Strategy	
Inspire/inform	Google children's spinning tops (http://www.topmuseum.org/5.html). Explore together and discuss the shapes and designs of the various spinning tops (YouTube – Spinning-Top Circus). Talk about why these types of toys were/are important and what is the science behind them (force, cause and effect).
Show	Model some spinning-tops. Show students the materials available to them to design and create their own spinning-top (pencils, elastic bands, skewers, different types of card, large buttons, milk bottle tops, toothpicks, paper, paper plates. See *'how to make homemade spinning tops'* prior to lesson for ideas.
Tell	Students that they will be designing and making their own spinning top. Students design page will need to be labelled with required materials and include a picture and steps of how they will construct their spinner. Remind students that they should consider making their top attractive in some way to stand out from the others (discuss the range of designs, styles, colours and so on of the tops seen prior).
Apply	Students design, then make, a spinning top.
Reflect	Students demonstrate how their spinning top works one at a time in groups of 5/6. Students will give positive feedback regarding what they have seen and give constructive and helpful hints for possible improvement. Each individual student will then complete their own evaluation of their task by indicating with a coloured self-evaluation paddle: 1 = unhappy (red); 2 = happy (blue); 3 = very happy (green). Teacher to take individual photograph of students holding design with final product indicating their personal evaluation of activity. Ask students to verbally justify their score. Display in the classroom.

Sample marking key

Engineering principles and systems – Forces create movement in objects

Assessment Key I = Independent SS = Some Support LS = Lots of Support

Student names	Researched spinning top designs	Design drawings included steps	Used appropriate materials	Self-reflection paddles 1, 2 or 3	Comments

Making connections across learning environments

NQS: Quality Area 1 – Educational program and practice

Standard 1.1 An approved learning framework informs the development of a curriculum that enhances each child's learning and development.

Element 1.1.6 Each child's agency is promoted, enabling them to make choices and decisions and to influence events and their world.

	Provocation	***Resources***
Inside spaces/environments	**Long ago!** Explore games and toys from a bygone era.	Elastics, knucklebones, chalk, hopscotch
	Spin me! Design a circular pattern (lines, patterns, spots, flowers, geometric lines) to use as a spinning game.	Circles of card, pencils, felt tips, toothpicks, chopsticks
Outside spaces/environments	**Spiral in control!** Design and draw a large spiral image on the ground with chalk. Decorate with loose part items. (Similar to a mandala).	Chalk, loose part items
	A-maze-me! Supply a number of interesting items for the students to explore designing and making a maze.	Cones, hoops, boxes, material, chairs, tables, gym mats, ropes
Ambience/Aesthetic	Internet search spiral designs in nature. Look for designs around your class and school. Search for music that represents spirals as background classroom music.	