

Approach: Group

Focus: Managing resources

Resources: 4 pieces of paper, 4 pairs of scissors, 4 rulers, 4 pencils, 4 instruction cards, cue card

Questions / instructions:

Hand each student an instruction card, pencil, paper, ruler and scissors.

You are going to try to make a mock-up of a whirligig by following these instructions. If you need some help, I can help you.

If assistance is required, help students to make the whirligig.

Now you can try out your whirligigs. Stand up and hold them high, with the pointed end facing the floor. Hold them at the bottom of the wings, then drop them.

If the whirligigs do not twirl, adjust the torn strips and have the students drop them again.

Imagine your class has decided to make lots of good quality whirligigs to sell at the school fair. As a group, you are going to discuss how you could do this. This card tells you the things that you will need to think and talk about.

Read cue card to students.

[same questions as 1–4 below.]

After you have talked about your ideas, I'll ask you to tell me what you have decided to do for each of the four questions on the card.

Allow about five minutes for discussion.

Now, tell me what your group decided for each of the four questions.

Ask the team each question from the cue card.

How to Make a Whirligig

1. Cut out a strip of paper 15 cm long and 4 cm wide.
2. Draw a line 5 cm down from the top of the strip. Make a tear down the middle of the strip to the pencil mark. This is the top of the whirligig.
3. At the bottom, fold the corners into the middle to make a point. Then fold the sides in again to make a sharp long point.
4. Fold one of the torn half strips forward and the other one backward. The strips need to point upwards a little bit. The whirligig should look like a Y shape.



	% response 2008 ('04)			% response 2008 ('04)	
	year 4	year 8		year 4	year 8
1. How could you make the whirligigs so lots of children would want to buy them?			4. What else could your team do so that there are lots of whirligigs to sell? [e.g. order, production line.]		
Mentioned ideas about:			Overall merit of the responses:	high	1 (2) 3 (2)
the general design (e.g. size, shape, structural features)	38 (45)	52 (42)	quite high	16 (19)	21 (7)
the materials used	40 (41)	58 (52)	moderate	35 (41)	43 (33)
decorative features (e.g. colour, printed designs)	93 (95)	99 (95)	low	48 (39)	33 (58)
the performance capabilities of the whirligigs	17 (22)	32 (22)			
the packaging of the whirligigs	11 (9)	8 (7)			
the cost of the whirligigs	41 (35)	38 (43)			
Overall merit of the responses:	high	0 (0) 4 (0)			
	quite high	12 (7) 16 (14)			
	moderate	35 (48) 42 (43)			
	low	53 (45) 38 (43)			
2. What problems might your team have when trying to make lots of whirligigs for the school fair?			Total score:	4–9	32 (22) 32 (14)
3. What could your team do to overcome some of these problems?				3	18 (24) 22 (14)
Mentioned ideas about:				2	13 (17) 16 (25)
availability of suitable personnel	53 (52)	59 (62)		1	15 (19) 14 (19)
processes and/or equipment	47 (57)	61 (35)		0	22 (19) 16 (28)
supply/storage of materials	54 (71)	69 (60)			
coordination of personnel, resources and processes	61 (53)	68 (67)			
Overall merit of the responses:	high	0 (0) 3 (3)			
	quite high	12 (19) 22 (7)			
	moderate	39 (47) 51 (38)			
	low	49 (35) 25 (52)			

Commentary:

Students had difficulty in discussing how to make paper whirligigs so that lots of students in their schools would want to buy them. This may have been attributable to the fact that the whirligigs were fairly simple to make, and students may not have seen them as something of value to purchase. Scores at year 4 and at year 8 were quite similar, but there is strong growth from 2004 to 2008.