

Approach: Team

Year: 4 &amp; 8

Focus: Generating and classifying questions

Resources: Bubble mixture, straws, paper towels, 2 notepads, cue card, 4 jars, red and blue stickers, answer sheet

## Questions / instructions:

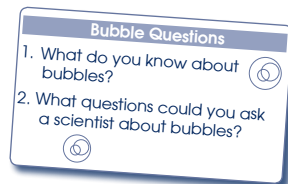
**Preparation: Put a small amount of bubble mixture and a straw into each jar.**

In science it is important to be able to think up good questions to help you learn more. Your team will be blowing bubbles and thinking up good questions about the bubbles. When you have thought up your questions you will decide which ones you might be able to find the answer to by doing experiments. You will also decide which ones you would need to ask a scientist about. You won't have to work out the answers to your questions.

Here are two questions for you to think about in your team.

**Show and read cue card.**

Use this bubble mixture to work in pairs to make bubbles. As you make the bubbles talk with your partner about some good questions that would help you



to know more about bubbles. Try to think up about eight questions together. I'll give you a few minutes to work out your questions in pairs, then we'll get you together as a team again.

**Hand out bubble mixture, notepads and pens. Allow time for discussion in pairs, then bring students together for group discussion.**

Now it's time to put the bubble mixture aside and share your ideas for really good questions with the group. I want each pair to share their questions, and the others to listen carefully. Then you can work out which are the best questions and write them down. Here is a recording sheet for writing your questions on. Try to write about eight questions.

**Hand out answer sheet. Allow time.**

Here are some red stickers and some blue stickers. Beside your questions put a blue sticker if you could find the answer by doing an experiment or a red sticker if you would need to ask a scientist about it.

**Hand out stickers.**

	% response 2007 ('03)			% response 2007 ('03)	
	year 4	year 8		year 4	year 8
<b>Proportion of questions which could lead to useful knowledge about the science associated with bubbles:</b>			<b>Proportion of questions with red dots which could best be answered by appropriately qualified scientists:</b>		
all or almost all	44 (41)	44 (55)	all or almost all	15 (22)	26 (30)
more than half (60-80%)	39 (35)	37 (28)	more than half (60-80%)	18 (24)	31 (28)
about half	7 (14)	7 (5)	about half	21 (10)	14 (10)
less than half (20-40%)	7 (7)	11 (12)	less than half (20-40%)	28 (27)	21 (24)
none or almost none	3 (3)	1 (0)	none or almost none	18 (17)	8 (8)
<b>Proportion of questions with blue dots which could reasonably be answered by children doing experiments:</b>			<b>Number of questions listed:</b>		
all or almost all	6 (5)	15 (10)	8 or more	50 (68)	65 (67)
more than half (60-80%)	13 (19)	22 (22)	6 or 7	31 (27)	26 (25)
about half	15 (12)	16 (11)	4 or 5	17 (5)	7 (6)
less than half (20-40%)	33 (20)	24 (24)	less than 4	2 (0)	2 (2)
none or almost none	33 (44)	23 (33)			
<b>Proportion of questions with red dots which could not reasonably be answered by children doing experiments:</b>			<b>Total score:</b>		
all or almost all	37 (58)	52 (57)	17-19	1 (5)	13 (13)
more than half (60-80%)	16 (25)	24 (23)	15-16	11 (17)	25 (22)
about half	15 (3)	10 (7)	12-14	32 (39)	31 (33)
less than half (20-40%)	16 (9)	9 (10)	9-11	34 (24)	21 (25)
none or almost none	16 (5)	5 (3)	0-8	22 (15)	10 (7)

**Commentary:**

Because this is a team task, no graph of subgroup performance is possible. There was little change in performance between 2003 and 2007 for year 8 students, but a marked decline for year 4 students.