

Approach: One to one

Year: 4 & 8

Focus: Fractions of a whole

Resources: Tangram puzzle

Questions / instructions:

% responses
y4 y8**Hand student the tangram.**

Here is a puzzle called a tangram.

It is a square made up of 7 pieces.



As I point to different pieces, decide what fraction of the whole tangram that piece is. You can take the pieces out and move them around if you want to.

Point to red piece.

- | | | | |
|--|-------------------------|----|----|
| 1. What fraction of the whole tangram is this red piece? | $\frac{1}{4}$ | 38 | 77 |
| 2. How do you know that? | clear explanation | 19 | 54 |
| | some explanation | 15 | 20 |
| | vague or no explanation | 65 | 26 |

Point to blue piece.

- | | | | |
|---|-------------------------|----|----|
| 3. What fraction of the whole tangram is this blue piece? | $\frac{1}{8}$ | 6 | 35 |
| 4. How do you know that? | clear explanation | 2 | 23 |
| | some explanation | 4 | 11 |
| | vague or no explanation | 94 | 66 |

YEAR 8 ONLY:**Point to green piece.**

- | | | | |
|--|-------------------------|----|----|
| 5. What fraction of the whole tangram is this green piece? | $\frac{1}{16}$ | • | 32 |
| 6. How do you know that? | clear explanation | • | 21 |
| | some explanation | • | 9 |
| | vague or no explanation | • | 70 |
| Total score: | 9 | • | 16 |
| | 7-8 | • | 9 |
| | 5-6 | 3 | 11 |
| | 3-4 | 19 | 25 |
| | 1-2 | 16 | 17 |
| | 0 | 62 | 22 |

[Note: Maximum score of 6 for year 4]

Commentary:

Students had difficulty in estimating fractions in this visual task. They were not strong at explaining their approach. Substantial growth was seen, however, from year 4 to year 8.