# BROWNIE SHARING
## UNIT B Equally partition area, linear, and set models

Strategies students have used:

## LESS ACCURATE

- Trial and Error

- Using known fractions ( $\frac{1}{8}$ and $\frac{1}{16}$ to estimate $\frac{1}{10}$ )

- Revision cutting/trimming (may not partition the total amount of brownie as pieces are 'shaved' off)

- Cutting on angles across the pan (not on diagonals)

## MORE ACCURATE

- Folding for half and then half again for 4 and 8 portions

- Cutting each of 8 pieces into 5 to create 40 pieces, then creating 10 groups of 4 small brownie slices

- Partitioning on diagonals (better for 4 and 8 portions) – students struggled to prove equal areas (requires thinking about the area of a triangle)

- Repeated sharing: allocate whole piece, split other pieces to allocate one-half of a piece to the group, share the final piece amongst the ten people

- Rolling the paper to estimate the number of pieces that would be created from a given length of fold (this worked well for estimating size)

## WATCH FOR

- Folding the paper over the previous fold which is slightly less accurate than a back-and-forth fold.

- Folding the paper the number of pieces (such as 5) rather than the number of folds to generate the number of pieces (which would be 4 if vertical folding).

- Overuse of the doubling strategy. The task requires students to move from eighths to tenths because the doubling strategy won't work and it requires partitioning to fifths (not halving).

- A lack of a range of folding strategies.

- Students wanting to cut the pan of brownies into a large number of roughly equal-sized pieces (like you would at home) rather than sharing the entire pan equally in fourths.

- Strategies that students use to prove that the various pieces represent the same fraction of the whole region.

- Students continually repeating a strategy that doesn't work. Ensure that they are made aware of the availability of fresh sheets of paper for each step.