# Games and activities

Pupils can use the following activities and games to generate their own exercises using six-sided blank dice. These can be given different values to target specific skills. Such involvement helps pupils' motivation but needs care because:

- each game should precisely target the particular skill required
- the multiplications generated will not be well graded and easier problems may not come first
- assessment should be built into the activity.

Pupils should have a basic competence before trying these activities. Assessment could take the form of self- and peer-assessment with pairs of pupils working together to throw the dice, do the division and then compare answers.

## A sharing activity

Two pupils generate a two-digit number by using two dice numbered 40 to 90 and 4 to 9 and take ten-rods and unit-cubes to represent the chosen number. They divide the pieces equally between themselves, writing the stages of a formal short division (by 2) as they separate the pieces. This activity can be extended to a group of 3 or 4 pupils using three dice numbered from 100 to 600, 20 to 70 and 4 to 9 to generate three-digit numbers. They divide the appropriate pieces equally amongst themselves into 3 or 4 parts. Hundred-squares are needed in addition to ten-rods and unit-cubes.

## Steps 1, 3 and 4: Two-digit ÷ one-digit (without remainders)

Ask the pupils to work in pairs.

- Pupil A has two dice labelled 20, 40, 40, 60, 60, 80 and 0, 0, 4, 4, 8, 8.
- Pupil B has one die labelled 2, 2, 2, 4, 4, 4.
- Pupil A rolls the two dice and generates a two-digit number, such as 68.
- Pupil B rolls the single die and generates the divisor, such as 4.

They write the short division and separately calculate the answer including any remainder. They compare answers. If they agree, they continue with another division. If not, they work out the correct answer before continuing.

## Steps 1, 3 and 4: Two-digit ÷ one-digit (with remainders)

Ask the pupils to work in pairs.

- Pupil A has two dice labelled 20, 30, 40, 50, 60, 70 and 2, 2, 3, 3, 4, 4.
- Pupil B has one die labelled 2, 2, 3, 3, 4, 5, and the activity proceeds as for Step 1.

## Steps 5 to 8: Three-digit ÷ one-digit (with remainders)

Ask the pupils to work in pairs.

- Pupil A has three dice labelled 100 to 600 and 20 to 70 and 2, 2, 3, 3, 4, 5.
- Pupil B has one die labelled 2, 2, 3, 3, 4, 5, and the activity proceeds as for Step 1.

## Division in context

These activities can be set in the context of buying identical items together and then calculating the cost of one item.

For example, in Steps 5 to 8 above, the activity can simulate a shop buying a consignment of televisions or iPads.

- Pupil A generates the cost of the whole lot.
- Pupil B generates how many items are bought.
- The answer to the division is the cost of just one item.

In all the above, answers can be checked using multiplication.