

## 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. This involvement will help 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 multiplication and then compare answers.

### Step 4: Two- and three-digit $\times$ a teens number with carrying

Ask the pupils to work in pairs.

- Pupil A has two dice labelled 10, 20, 30, 40, 50, 60 and 1, 2, 3, 4, 5, 6.
- Pupil B has one dice labelled 11, 12, 13, 14, 15, 16.
- Pupil A rolls the two dice and generates the two-digit number to be multiplied, for example, 46.
- Pupil B rolls the single dice and generates the multiplier, for example, 16.

They should each write the two numbers as a long multiplication and do the calculation separately, then compare their answers. If they agree, they continue with another multiplication. If they disagree, they work out the correct answer before continuing. Not all the generated multiplications will involve carrying in the addition.

Variations:

- Pupil A has dice labelled 40, 50, 60, 70, 80, 90 and 4, 5, 6, 7, 8, 9. Pupil B has dice labelled 14, 15, 16, 17, 18, 19. The pupils now generate more difficult multiplications.
- Pupil A has a third dice labelled 100, 200, 300, 400, 500, 600. This pupil now generates three-digit numbers and more difficult multiplications.

### Step 8: Two- and three-digit $\times$ two-digit with carrying

Ask the pupils to work in pairs.

- Pupils A and B have two dice each. The dice are labelled 10, 20, 30, 40, 50, 60 and 1, 2, 3, 4, 5, 6.
- Both pupils roll their dice and generate two two-digit numbers, such as 34 and 56.

They write the two numbers as a long multiplication and do the calculation separately, then compare their answers. If they agree, they continue with another multiplication. If they disagree, they work out the correct answer before continuing. Not all the generated multiplications will involve carrying in the addition.

Variations and alternatives:

- If the pairs of dice are labelled 40, 50, 60, 70, 80, 90 and 4, 5, 6, 7, 8, 9, the multiplications are more difficult.
- Pupil A has a third dice labelled 100, 200, 300, 400, 500, 600. This pupil now generates three-digit numbers.
- The game of **Bingo** uses a bag containing the numbers 1 to 99 printed on small balls. Remove the balls numbered 1 to 10. Pupils A and B now withdraw one ball each and multiply the two two-digit numbers selected. The balls are replaced before generating another multiplication.