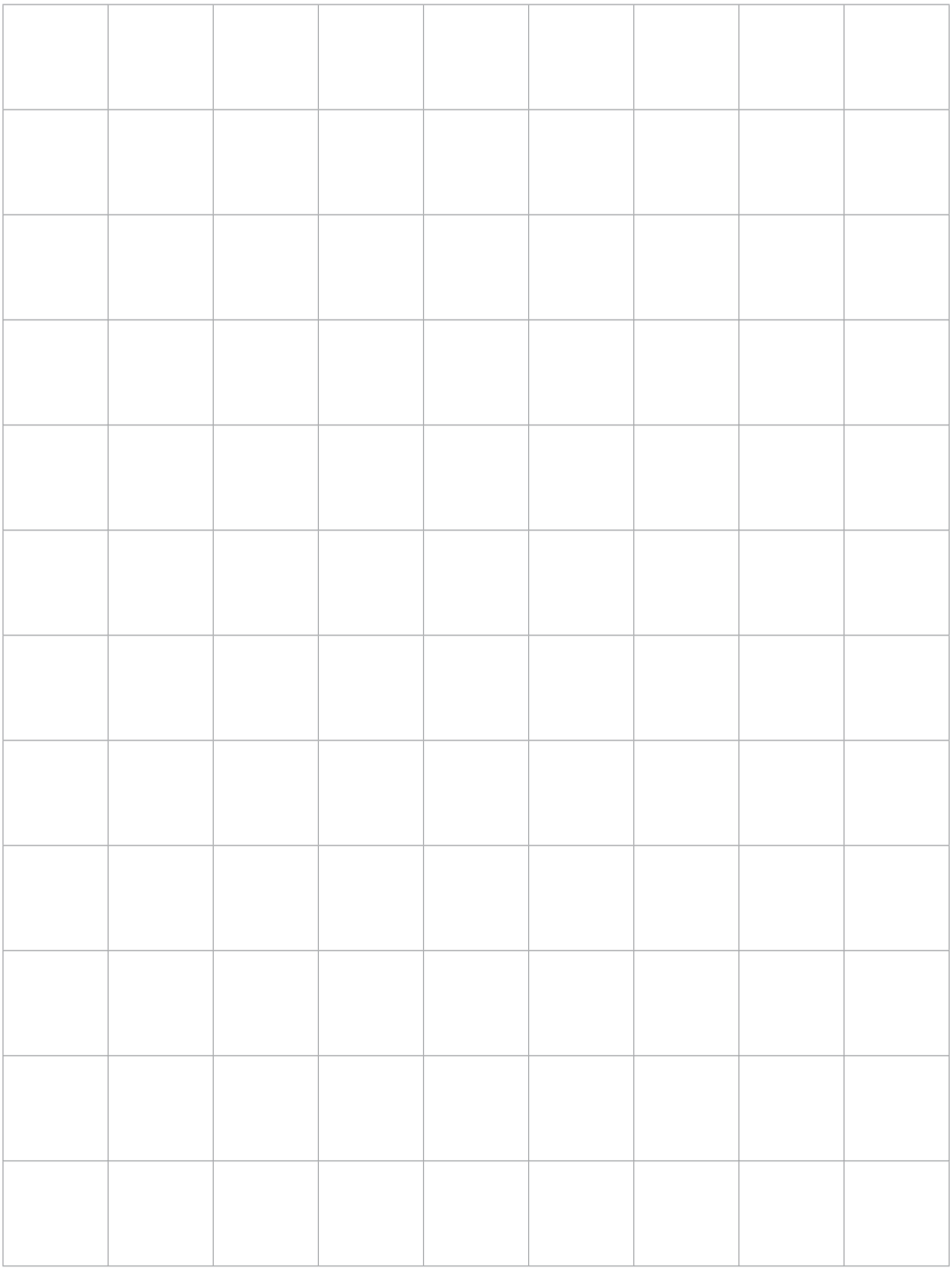
20mm Grid

Name:

Date:



10mm Grid

Name:

Date:

Prepositions

While playing barrier games students will use specialised mathematical language. The mathematical language will be used in conjunction with prepositions. A preposition is generally used in front of nouns.

above	in
across	inside
after	into
against	near
along	on
alongside	onto
among	opposite
amongst	outside
around	over
at	past
before	round
behind	through
below	to
beneath	toward(s)
beside	under
between	underneath
by	up
down	upon
following	within
from	

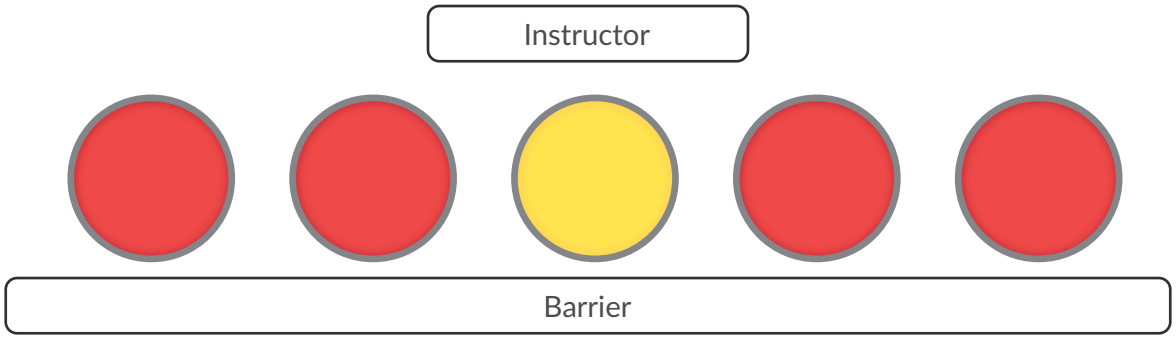
Students whose first language is not English will struggle with the use of prepositions. They may need to be provided with printed support statements or vocabulary cards. Examples include: “Put a ... under, over, above, below the ..."

Line Ups

Task 1: Line Up

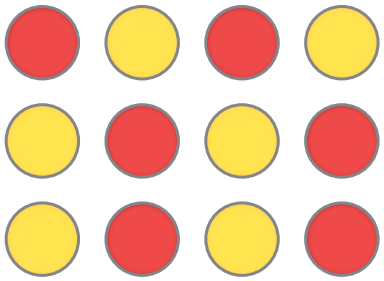
Two-colour counters are placed in a line (row) parallel to the barrier. The instructor describes the layout of the line using words like left and right. Once the barrier is lifted players can discuss the reversal of left and right. The example below might be described as:

- Five counters in a line (parallel to the barrier)
- Four red
- Middle counter is yellow (centre)



Task 2: Line Up II

The instructor lines the counters up perpendicular to the barrier



Task 3: Array Arrangement

Counters are placed in an array formation (grid).

Instructors can refer to the top left, bottom right counter.

Extension

Increase the complexity by introducing different colored counters.

Adding different sized and or shaped counters will increase the complexity even further.

Coin Collection

A game for Small Groups, Pairs, Whole Class

Mathematics Behind the Experience

In addition to what is required in the curriculum, students will be learning to distinguish between coins according to feel/touch. In real life people often feel for coins in their pocket or purse in order to pull out certain coins. For example, when paying for items worth $10.40 a person might hand over a ten-dollar note and feel for two twenty-cent coins.

There are six Australian coins currently in circulation. All Australian coins have the obverse (heads) sides the same: a profile of Queen Elizabeth II, with 'Elizabeth II', 'Australia' and the year it was minted around the outside. The reverse (tails) sides of the Australian coins are each different. The coins are different sizes, and all are circular other than the 50c piece. Four of the coins are 'silver' (copper and nickel); the other two are 'gold' (copper, aluminium and nickel).

The main features on the reverse (tails) sides of the coins are:

- **5c**: Echidna
- **10c**: Lyre bird
- **20c**: Platypus
- **50c**: Australian coat of arms
- **$1**: Five kangaroos
- **$2**: Indigenous elder and the Southern Cross

Mathematics Language Used in the Experience

Cents, coins five / ten / twenty / fifty cent piece, gold / silver coins, one / two dollar coins

Materials Needed

- Sets of Australian coins (real or plastic).

Early Experiences

Place one of each coin into the Mystery Bag.

Students can be asked to pick a particular coin out of the bag. For example, the student might be asked to pull out:

- the smallest coin - in value or in size,
- the fifty-cent piece,
- coins in order of size - smallest to largest,
- two coins of roughly the same size,
- two coins with the largest size difference,
- coins in order of value.
    - *least value to greatest value.*
    - *from the coin worth the most to the coin worth the least.*

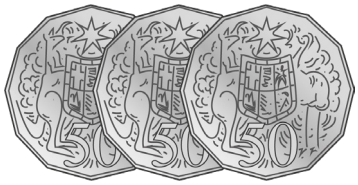
Extending the Experiences

Place several of each coin the Mystery Bag.

Students feel inside the bag and draw out coins worth a certain value. For example students might be asked to draw out:

- two coins with a total value of $1.50

- three coins with a total value of $1.50



- $1.20 without using gold coins

- four different coins with a total value of $1.75

Students can record which coins they have pulled out of the Mystery Bag by making coin rubbings.

Make This Amount

Students can be given a set total, and reach inside the Mystery Bag to draw out the correct amount. For example, ask them to take out $2.55.