
Games

Here are some games that you can play at the start of problem solving sessions. They are all related to problem solving, and help the students to develop problem solving skills.

1 Set

"Set" is a card game that is very useful for helping the students spot patterns. The instructions can be found on the webpage. There is also a template - you should print this in colour, on hard paper (180 gsm) if possible. You will need to cut out along the black lines to make the cards.

12 cards are put on the table, and students try to find a "set", which is three cards that satisfy some property (see set instructions). When you find a set, you remove the three cards and replace them with three new cards.

At the start, the students should work together to find sets. After they've played it more than 4 times, students should play against each other to see who can find the most sets per game.

2 Counting to 21

Two players. The aim is to count to 21 and be the person not to say 21. Each player may say 1,2 or 3 numbers per turn.

example

Player A: 1,2

Player B: 3,4

Player A: 5

Player B: 6,7,8

Player A: 9,10,11

Player B: 12,13

Player A: 14,15,16

Player B: 17,18

Player A: 19,20

Player B: 21 ← Player B loses

3 Guessing codes

2 players. Player A makes a four letter code from the following set of colours { Red, Green, Blue, Yellow} - lets uses {R,G,B,Y}. For example YYBB. Don't show the code to Player B.

Player B guesses a code. For example YBRG. Player A tells Player how many colours are correct - in our example 2 - and also how many colours are correct and in the correct position - in our example 1.

Player B continues to guess codes and Player A continues to give the information above. Here's some more examples of guesses. Remember that the correct code is YYBB.

Guess	Correct Colours	Correct Colour + Position
RRRR	0	0
RGYY	2	0
GYGB	2	2
YBYB	4	2
BYBY	4	2
BBYY	4	0
YYBB	4	4

Play twice, in game 1, Player A makes the code, and in game 2, Player B makes the code. Whoever guesses the code in the least number of steps wins.

Challenge the students to find the least number of guesses they need.

4 Guessing a Number

Two players. Player A thinks of a number between 0 and 63. Each turn Player B says a number and player A says whether their number is bigger or smaller than the number A said.

For Example. Player A thinks of the number 11.

Guess from Player B	Player A
35	smaller
30	smaller
25	smaller
20	smaller
5	bigger
15	smaller
10	bigger
11	correct

Play twice, in game 1, Player A picks the secret number, and Player B guesses and in game 2, Player B picks the secret number and A guesses. Whoever guesses the code in the least number of steps wins.

After the students have played this a few times, ask them what is the minimum number of guesses they need. This should take them a while to figure out. If they figure it out, then ask them what if it were numbers between 0 and 1000.