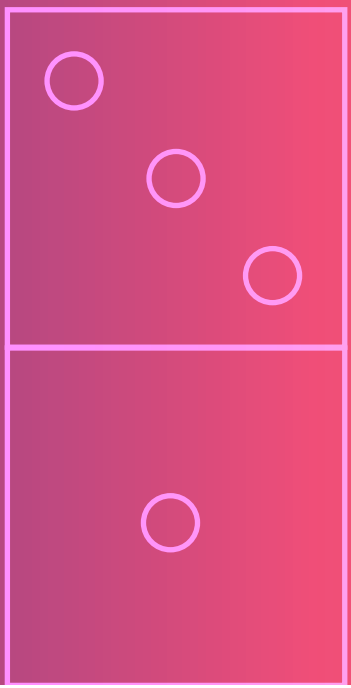
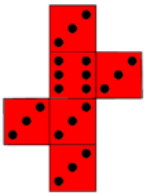
11



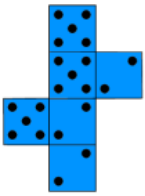
Roll the dice

Topic: Probabilities
Theme: Calculating Probabilities with dice
Abilities: Deduce, manipulate, calculate
Material: Scissors / glue
Level: Age 14 / 18

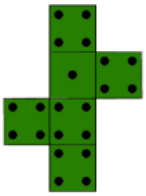
Math Reality



RED



BLUE



OLIVE

These dice have 6 faces but, as you can see, there are only 2 different values on each dice, respectively:

- RED: five 3 and one 6
- BLUE: Three 2 and three 5
- OLIVE: Five 4 and one 1

Play!

Build the differents dice. Each student will pick one of the dice. Roll the dice thirty times !
Then, write the results on a sheet of paper. Do you think the results are coherent ? Do you know why ?

The probability of an event A is P(A) = (number of possibilities for our choice)/(number of equally likely possibilities)

- The red dice has 5 chances out of 6 to roll a 3 and 1 chance to roll a 6. Thus, the probability of getting a 3 is 5/6 ; the probability of getting a 6 is 1/6 .
- The blue dice has 3 chances out if 6 to roll a 2 and 3 chances to roll a 5. Thus, the probability of getting a 2 is 1/2; the probability of getting a 5 is 1/2 .
- The olive dice has 5 chances out of 6 to roll a 4 and 1 chance to roll a 1.

Throw the red and the blue dice at the time. The winning dice is the one with the higher result.Which one will be more likely to win ? Draw a tree diagram and complete it for a better visualization of the calculations.