

Find the outcome

Materials

- Board: A3 paper (to be printed and laminated);
- Right triangle pieces options:
 - ready-made from the store,
 - PVC,
 - PLA and a 3D printer;
- For the numbers on the pieces, you can either draw numbers with a marker or use stickers.

Brief description

This activity uses a 3 x 3 x 3 payoff matrix to demonstrate how two persons/agents engage in decision-making with three choices. For example, the matrix below shows the game Rock, Paper, Scissors and the possible outcomes between two players.

		Person A		
		Rock	Paper	Scissors
Person B	Rock	(0, 0)	(-1, 1)	(1, -1)
	Paper	(1, -1)	(0, 0)	(-1, 1)
	Scissors	(-1, 1)	(1, -1)	(0, 0)

The triangle pieces used to fill the board have the numbers 0 = draw, 1 = winning and -1 = losing. These numbers indicate the possible outcomes of the two agents based on the intersection between each of their choices. For instance, paper wins over rock (see table above). In order to make it easier for users to see the pattern created, the pieces are in 3 different colours based on the outcomes described earlier. This

activity is used to contemplate all possible results and put them on the board accordingly.

Assembly

Design of all the pieces

The right triangle pieces should be in 3 different colours (6 pieces per outcome, total 18).

Suggestions for colours: Choose colours that contrast one another to make it easier for users to distinguish between the three outcomes.

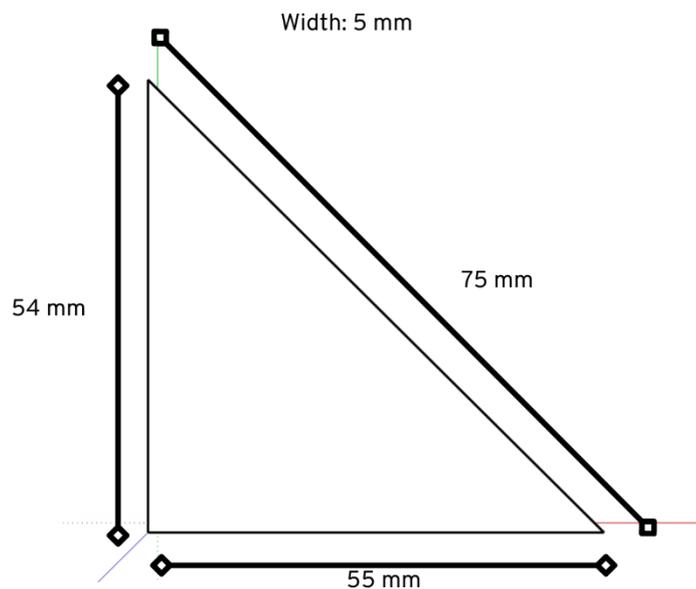


Figure 1. Measurements of right triangle

Assembly

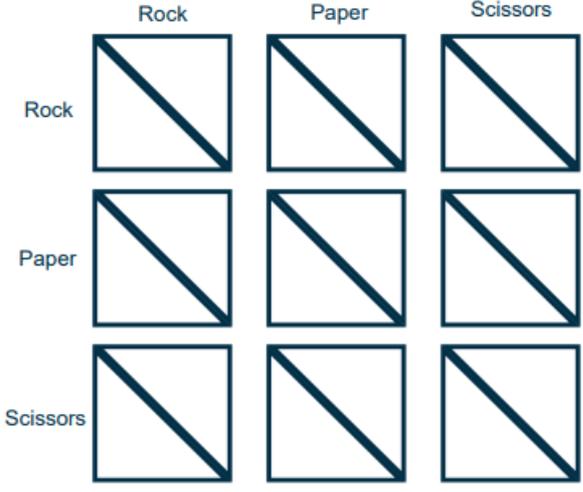
There are no assembly steps required. Once you have the right triangle pieces and the board, you are ready to use the exhibit.

The Board (DINA3)

Exhibit 11: Find the outcome

Use the pieces to play out the options of the rock-paper-scissors game.

Rock Paper Scissors

0 = no change 1 = winning -1 = losing



Other Options

The numbers on the pieces can be extruded to help adults with visual impairment understand the values more easily. Another option could be to design the matrix with other shapes, such as rectangles and or circles.

Explanation

This activity engages users in the process of decision-making through the payoff matrix. Within that, it becomes easier to visualise the concept of strategy formation and probability in everyday scenarios. The matrix can also be 2 x 2, 4 x 4 or even

bigger, depending on available choices. The example of the rock, paper, scissors game gives a zero-sum.

Competences

- Probability
- Understanding the payoff matrix
- Identifying the advantages and disadvantages of a situation
- Decision-making and strategy formation

Observations

Even though one scenario is presented on the board, the activity can be extended using the same pieces. but other scenarios, and by adding more triangle pieces.

For 3D Printers (if applicable)

The right triangle pieces can be constructed using 3D software and printer.