

Appendix 3

CRMs Memory Card Game Instructions

The aim of the game is to match the cards with the properties of the elements (blue cards) with their corresponding application (orange cards).

MATERIAL

The following material is needed for the game:

- The three sets of cards from **Appendix 4**, printed on a sheet of paper or cardboard on one side and having cut them out individually. Do not mix the cards of one group with those of another (as the properties and applications between elements are intended to be different from each other to avoid confusion). Each set is played individually.
- A dice (there are websites to roll a virtual dice).

The teacher can print out a copy of the cards for himself/herself and not cut them out, as the document has the elements matched with their applications. In this way, the teacher will have the solutions in case of doubt.

BEFORE STARTING

Divide up the class in 3 groups, preferably of 3-4 teams with 2-3 students per team, and distribute each group around a different table in the classroom. Each group will be given a different set of cards.

GAME PLAY

The cards should be placed face down on the table. On one side of the table all the blue cards are randomly distributed and on the other all the orange cards are randomly distributed as well. The game is played as follows:

- Each team turns over 2 cards (one from the blue pile and one from the orange pile) in his turn and show them to the other players. If the two cards match, they keep them, but if they don't, they have to put them back face down in the same position.
- The next team clockwise takes its turn.
- The game continues until there are no more cards on the table. The winning team will be the one with the most pairs.

- There are 8 special cards that do not correspond to elements applications or uses (which are distinguished by the black colour) and their function is to make the game more dynamic. These cards must be placed face down on the table and shuffled like the rest of the cards. They can be distributed between the blue and orange groups indistinctly, as long as 4 of them are placed in each group, so that there are the same number of cards in both groups. Each time a team turns over one of these cards, they must proceed as indicated on the card and then remove it from the game board so that it cannot be turned over again by another team. These cards do not count in the final score.

SPECIAL CARDS

Functions of the special cards:

- **Lose your turn:** The team who flips over this card must pass the turn without being able to keep any cards, even if they have discovered a match pair during this turn, putting the cards back face down in the same position.
- **1 extra turn:** The team raise another card of the same group and at the end of their turn have a new chance.
- **Steal a pair of cards:** The team who flips this card may steal a pair from any other team (if any team had already achieved a match pair).
- **Extra cards:** The team who flips this card must roll a dice and depending on the number obtained they have to:
 - # 1: Turn over 1 extra card from the group of their choice.
 - # 2: Turn over 2 extra cards, **1 from the blue group** and **1 from the orange**.
 - # 3: Turn over 3 extra cards, **2 from the blue group** and **1 from the orange**.
 - # 4: Turn over 1 extra card from the group of their choice.
 - # 5: Turn over 2 extra cards, **1 from the blue group** and **1 from the orange**.
 - # 6: Turn over 3 extra cards, **1 from the blue group** and **2 from the orange**.

All the pairs that are found with the extra cards can be kept by the team who has discovered them.

- **Extra secret card:** The team turn over an extra card but must not show them to the other players. If that card matches the other one, they can keep it, if not they put it back face down on the table without the other players seeing it.