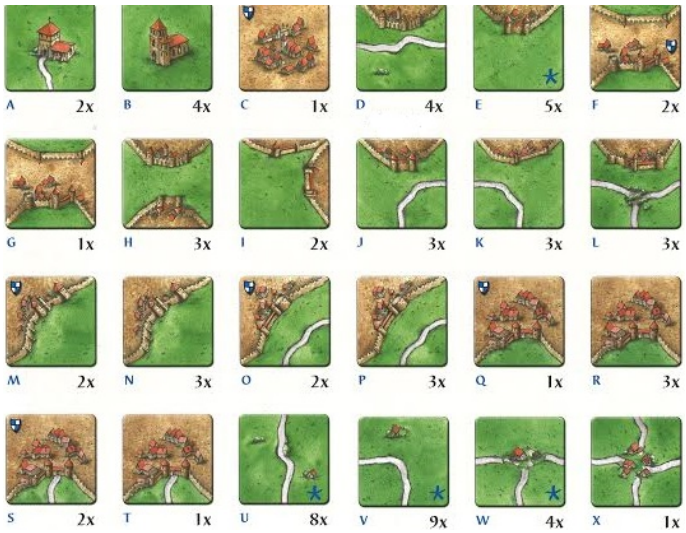
Carcassonne Supplementary Materials

Mindy Capaldi and Timothy DeRolf



These are all the tiles included in the game. There are a total of 72 tiles.

Goal: Get the most points. The game ends when you run out of tiles.

How to get points: You will place a person, or meeple, on each of the following to claim it. If you finishing building the road/city/monastery, then you get your person back and you get the points. If you don't finish building it, you get some or all of the points when the game ends.

- Roads- each piece of road counts as one point. A road is completed if each end has a piece that breaks up the road segment somehow.
- Cities- For a completed city, each piece is 2 points and each banner is 2 points. If uncompleted, each is 1 point.
- Monasteries- A monastery is complete when it is surrounded by tiles, which means there are 9 tiles including the monastery itself. Each tile counts as 1 point.

You cannot occupy a road, city, or monastery that someone else has claimed. If two separate roads or cities are joined, and both are claimed, then both players get the points.

After playing the game, answer the following:

1. The monastery is a key type of tile because you can get up to nine points from this one tile. What is the probability of choosing a monastery if no tiles have been chosen yet?

2. What is the probability of choosing a monastery if 20 tiles have been picked and two of them were monasteries?

3. At the point in the game described in the last question, what are the odds of choosing a tile that is not a monastery?

4. Suppose all of the banner pieces have been picked as well as two tiles with just a straight road (type U) and four tiles with just a curvy road (type V). What is the probability of choosing a tile that has a road or a monastery? What about a road and a monastery?

5. At a given point in the game, assume that the following tiles are left to randomly choose from:

   - 3 monasteries (worth 5 points each because any of the three could be placed next to 4 other tiles)
   - 21 tiles with a city but no banner (worth 2 points each)
   - 4 tiles with a city and a banner (worth 4 points each)
   - 6 tiles with only roads (worth 1 point each)

   Using the points described above, what is the expected value of your next tile?

6. At the beginning of the game, how many ways are there for the first three tiles that are picked to be a monastery, then a tile with some portion of a city, and finally a tile with only a road (no monastery or city)? What is the probability that this happens?

7. (Bayes' Theorem) Consider the following five mutually exclusive types of tiles: monasteries (M), cities with a banner (B), cities with a road but no banner (A), cities with no road or banner (C), and tiles with only roads (R).

   (a) Start a tree diagram with these events/tiles as the first branches. Include the probability of each event.

(b) Your opponent, MacDonald, is deciding whether to place his meeple on a field (the grass) or the other important feature on each tile. MacDonald never chooses a field over a monastery. Banner pieces lead to higher points, so he only chooses to place his meeple on the field 3 times out of 10 for type B. Sixty percent of the time he chooses the field for type A and half the time on C. Finally, three-fourths of the time he chooses fields over simple roads. Finish the tree diagram based on this information.

(c) If you start a new game with player MacDonald where he gets to play a tile first, what is the probability that a road (R) was drawn if he placed a farmer on the tile?

(d) Are the events of MacDonald drawing a road tile (R) and choosing a field independent?