Climate Impacts Settlers of Catan

This game is adapted from the Settlers of Catan created by Klaus Tueber. This is not intended to be sold as a game and is made for a classroom activity and other educational purposes.

The purpose of this game is to give students hands-on experience with renewable and nonrenewable resources, the impacts of resource use, the impacts of using fossil fuels, and the impacts of climate change.

Setting Up the board

- If you have NEVER played Settlers of Catan - go here to read the official rules and watch a playthrough. This game is based on Settlers of Catan and the rules and set-up have been changed to reflect impacts of climate change and resource use.
    - https://www.youtube.com/watch?v=8Yj0Y3GKE40
    - https://www.catan.com/understand-catan/game-rules
        - click on base game
- The board is set up with hexagon tiles that can be drawn on butcher paper. A standard board that works for a class of 30 students (playing on teams of 3 - so 10 teams) has about 70 tiles. I pull butcher paper over my lab tables - or combine 3 large tables to make one long board with 3 different islands on it - see pictures at the end)
- The tiles need to consist of the following resources
    - Sheep
    - Wood
    - Grain/Wheat
    - Stone
    - Brick
    - Coal
- Each tile needs to be identified - Feel free to draw little sheep/trees/bricks etc. on the tiles or just label them with words. Each tile needs to have a number written on it 1-12
- Randomly generate the numbers to ensure that no two are beside each other and that the numbers are distributed evenly through the resources
    - (6,7,8 are high probability and should not be located next to each other)
- The island of Catan can be arranged however you please, Some examples are:
    - One large island
    - Two medium sized islands
    - Three small islands

- This Catan map generator is a good place to start.
    - https://catan.bunge.io/
    - A good rule is that wheat/trees/sheep should be your most abundant tiles (ex, 30 tiles per board)
    - Then brick/stone being less abundant (ex, 25 each board)
    - then coal should be “rare” (15 each board)

- Cards can be make with construction paper cut in to small cards - the following numbers are assuming you are playing with 10 “teams”
    - Sheep - light green (40)
    - Wood - brown (40)
    - grain - yellow (40)
    - stone - gray (40)
    - brick - red (40)
    - coal - black (40)

Game Play

- To start the game each group needs to pick a colored marker, try and make sure there are no repeats in color
    - You can also use colored popsicle sticks as roads and little wooden cubes as settlements and cities
- Students will draw their settlements, roads, ships, and city right on the island
- Students should pick where they would like their first settlement to be and indicate it with a circle
    - Settlements can only be in the corners of the hexagon tiles
- Students will then draw a road along the side of a hexagon tile connected to their settlement
- Go around the table until all students have picked their first settlement.
    - Have students collect resource cards from their first settlement
- Going in reverse order, the students need to pick a second settlement and road
    - Second settlements do not have to be connected to the first settlements
        - This is the only time this rule applies
- Taking turns students follow the following steps
    - Roll both dice (2 D6) (I have students pull up Google Dice on their phones/ipads so we don’t have dice flying all over the place)
    - Collect resource cards
    - Build/Trade

- Students only collect resources if their settlement/city is touching the hexagon tile of the resource that has been rolled.
    - Cities collect two resources from that tile
- Building
    - Must use resources on building poster in order to build
        - Make a poster to hang above the board with the following info
            - Building is the same rules as regular Catan
                - Road = wood+brick
                - Settlement = wood + brick + sheep + wheat
                - City - can only be built upon a settlement = 2 wheat +3 ore
                - Ship = sheep+ wood
                - Coal can be used as ANY two resources (wild card style)
    - Settlements are built at corners of tiles and must be connected to a road of the same team
    - Roads are built along the edges of the tiles (drawing lines to connect corners)
    - Settlements may be upgraded to cities, at which point a star is drawn over the circle
    - Ships may be built in order to reach the other island
        - 3 ships are needed to cross the ocean
        - Ships cannot be built unless they have a settlement on the coast
        - Roads cannot be built from the new land unless they have built a settlement
- Trading
    - Trading may happen between players and does not have to be 1:1 (as in students can make up the trade rate that benefits them)
    - Trading may not happen back to the bank unless your player has a settlement on the coast (trading to the bank is 4:1 on all resources except coal)
        - Coal may be traded back into the bank for any 2 resources (once they have a settlement on the coast)

Rules

- Special Coal Rules
    - Coal may be used for any two resources
    - For every coal that is used a tally needs to be marked where the students can see (like on the whiteboard or a poster board above the board)
        - Coals are used when they come back to the bank – if students trade other students for coal, it is not considered a use
    - Once 5 coals have been used, the last student to use a coal draws a natural disaster card.

        - Industrial Pollution – lose a settlement
            - Students pick what settlement they lose – Mark out the settlement with X
        - Landslide – lose tile
            - Roll the dice to see what tile is lost – tile must be touching settlements of last coal user
            - Mark an X through that tile and it can no longer gain resources from it
        - Hurricane – lose coastal settlement/city
            - Roll dice – any settlement on the tile that is rolled that is on the coast is lost
        - Flooding lose tile - Roll dice – same as landslide
        - River Flooding lose settlement/city
            - Roll dice – any settlement that is landlocked and touching the tile that was rolled is lost
        - Crop yield decreases - climate related drought
            - Roll dice - any wheat that is the dice number gets wiped out
    - Students may rebuild settlements after they have been destroyed.
    - Once tiles are gone players can no longer get resources from them – Mark them out with a big black X

Other special rules different from Settlers of Catan

- There is no thief, 7 is just rolled and resources collected. This allows students to hoard resources instead of using them or losing them.
- Once the resource cards for that resource are gone (as in student hands) the teacher can call that the resource is no longer available. This can be done with non-renewable resources, such as brick, stone, coal. Mark out the tiles with a big black X
    - Resources that are renewable, sheep and wheat don't do this (when the cards are back on the board they can still draw them. No cards on the board, just tell the students that there is a shortage in supply right now.
    - Trees - while technically renewable, it takes at least 13 years for a Pine to mature to be used in building supplies. When trees run out, they run out for a while (I will mark out some of the tree tiles, but leave others producing) - this is a good talking point of the Rapa Nui tribe and how they went extinct because they chopped down all the trees on Easter Island

How to Win

- The player with the most points at the end of the designated time wins
    - Settlements = 1
    - Cities = 2

Discussion Questions

- In real life what do we use coal for?
- How does using coal benefit you? How did it benefit you in the game?
- How did using coal hurt you/ others in the game
- How does this relate to real life?
- What resources in the game are renewable/nonrenewable?
- What would eventually happen to the nonrenewable resources?
- What is deforestation?
- What is overgrazing?
- How is burning coal related to climate change?
- In the game some of you were out to WIN and you didn't care what happened to others, what is a real life example of this? Who is out to WIN in real life?
- What is sustainability?
- Why is it important that we leave resources for future generations?

Reference Images