



WATER CYCLE TOWER GAME

Grade Level

3-8

Length of Lesson

45 minutes

Objective

By the end of this lesson, students will have a better understanding of the steps and sequence of the water cycle.

Materials Needed

- Jenga or Tumbling Tower wooden block game sets
- Copies of Student Worksheet
- Copies of Student H₂O Path Sheet
- Copies of Score Sheet
- Copies of Student H₂O cycle templates

Standards

NGSS

Earth's Systems:
2-ESS2-3

Lesson Summary

This lesson is designed to give students a hands-on activity to practice and reinforce their understanding of the water cycle. A basic understanding of the water cycle prior to playing the game is ideal.

Suggested Sequence of Events:

1. Set Up: Prior to playing, teachers will need to color/paint the ends of some of the wood blocks to denote different steps in the water cycle. See the Teacher Resources page for details.
2. Pre-Activity: As you teach your water cycle unit, consider utilizing the IAITC Water Ag Mag, available on the IAITC website. *Water is Water* by Miranda Paul is an excellent water cycle book with some subtle ag connections.
3. Review the steps of the water cycle and important vocabulary terms: evaporate, condense, precipitate, flow, collect, uptake, and sublimate.
4. Complete the activity following the procedures:
 - Give each student a copy of the student worksheet and read through it together.
 - Divide students into groups and provide each group with a tumbling tower game. Have students work together to decide which way they would like to play the game (options 1-4 on the student worksheet).
 - Students can play the game in a variety of ways, based on the allotted time, student ability, and teacher preference. See the Teacher Resources page for full instructions of each option.
 - Groups who choose to play option 3 will need copies of the H₂O Path Sheet and the Score Sheet. For option 4, they will need copies of the Student H₂O Journey Sheet. These can be laminated for multiple uses.
 - No matter which way students decide to play the game, normal Jenga/tumbling tower rules apply; Once a block is successfully pulled, it is placed back on top of the tower. Students should record their points as they play.
 - Students take turns, marking their progress through the water cycle and verbally explaining what each color represents in the water cycle.
5. Whole class discussion and reflection of activity.

TEACHER RESOURCES

Extension Ideas:

- Students can play the game in the following ways, based on time allotted, student ability, and teacher preference:
 - Option 1: Students play until the tower falls. Students earn points for each colored block they remove. The student who knocks the tower down earns a penalty. Points are added up at the end; the student with the most points wins. Students should explain the part of the water cycle that corresponds with the color they chose to remove.
 - Option 2: Pre-determine a number of points students should earn. If the tower falls, that student will earn a penalty, but then the group re-stacks the tower and continues play. The first student to earn the correct number of points wins. Students should explain the part of the water cycle that corresponds with the color they chose to remove.
 - Option 3: The first student to successfully make it through all three paths on the water cycle sheet by removing the corresponding colored wooden blocks wins. Students can check-off or X-out each step as they pass through the path. Once they start a path, they must completely work through that path before starting the next path. Use the attached point sheets for keeping score for this option.
 - Option 4: Students use the attached Water Cycle Map to create their own journey through the water cycle. Once they have correctly sequenced (drawn) each step of the water cycle on their maps, they must then follow that sequence as they play the game and remove the corresponding blocks. The first student to complete their water cycle wins. Use attached Student H₂O Journey Sheet for this option.
- Go to agintheclassroom.org to contact your County Literacy Coordinator for free classroom sets of our Ag Mags!

The numbers in parentheses denote the number of blocks that need colored. Any leftover blocks do not need to be colored.

- Blue = Precipitation (6)
- Green = Uptake water (4)
- Pink = Sublimation (4)
- Red = Evaporation (4)
- Brown = Collects (4)
- Orange = Condenses (6)
- Yellow = Flows (4)





WATER CYCLE TOWER GAME

INSTRUCTIONS & RULES

All the water on Earth moves between oceans, rivers, lakes, the land, and the atmosphere in an ongoing cycle called the water cycle, which is powered by the sun. As the water flows through the cycle, it can change between the three states of matter: solid, liquid, and gas.

Set Up: Stack up the tumbling tower wooden pieces in a random order. Some of the pieces are colored and some are plain. Try to scatter the pieces throughout the tower as you stack it up. Then, get your game sheet and get ready to play!

Which Way to Play: There are 4 different ways to play the game. Read through all of them and then, as a group, decide which way you want to play!

- Option 1: Play until the tower falls. You can earn points for each colored block you remove. The person who knocks the tower down earns a penalty. Points are added up at the end; the person with the most points wins.

Rules: When you remove a colored block, explain that part of the water cycle to the rest of your group. Use scratch paper to keep score.

- Option 2: Pre-determine a number of total points to play to. If the tower falls, that person will earn a penalty, but then the group can re-stack the tower and continue playing. The first person to earn the correct number of total points wins.

Rules: When you remove a colored block, explain that part of the water cycle to the rest of your group. Use scratch paper to keep score.

- Option 3: The first person to successfully make it through all three given paths of the water cycle by removing the corresponding colored wooden blocks wins.

Rules: When it is your turn, choose Path 1, 2, or 3 to start. When you choose the path, start with the first step in that part of the water cycle and find a piece with the corresponding color. Remove that piece from its spot on the tower and then check off that step of the path. You must complete this entire path before you can move onto another path.

- Option 4: Use the attached Water Cycle Map to create your own path through the water cycle. Once you have correctly sequenced each step of the water cycle on your map, you must then follow that sequence as you play the game and remove the corresponding blocks in order. The first person to complete their water cycle wins.

No Skipping: If you can't pull the colored block you need, you have to pull a blank colored block. You cannot skip your turn OR pull a different colored block.

Point System: Colored blocks are 4 points each, blank blocks are 0 points.

Penalty: No matter which way you decide to play, if you knock over the tower, 10 points will be subtracted from your score at the end.



WATER CYCLE TOWER GAME

STUDENT H₂O PATHS: OPTION 3



PATH 1



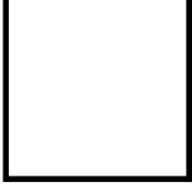
Liquid **evaporates** into water vapor.



Water vapor **condenses** to form clouds.



Water **precipitates** from clouds as rain or snow.

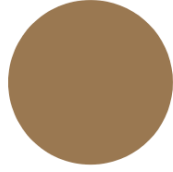


12 points if completed

PATH 2



Liquid water **flows** across land.



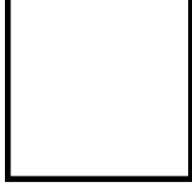
Water then **collects** in rivers, lakes, the soil, and other places.



Plants **uptake** the water from the soil.



Water then **transpires** from plants into the atmosphere.



16 points if completed

PATH 3



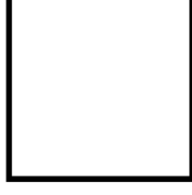
Ice can turn directly water vapor through **sublimation** into the atmosphere.



Water vapor **condenses** to form clouds.



Water **precipitates** from clouds as rain or snow.



12 points if completed



Science

STUDENT SCORE SHEET: OPTION 3



PATH 1 POINTS + PATH 2 POINTS + PATH 3 POINTS - KNOCK DOWN PENALTY = TOTAL SCORE

PATH 1 POINTS + PATH 2 POINTS + PATH 3 POINTS - KNOCK DOWN PENALTY = TOTAL SCORE

PATH 1 POINTS + PATH 2 POINTS + PATH 3 POINTS - KNOCK DOWN PENALTY = TOTAL SCORE

