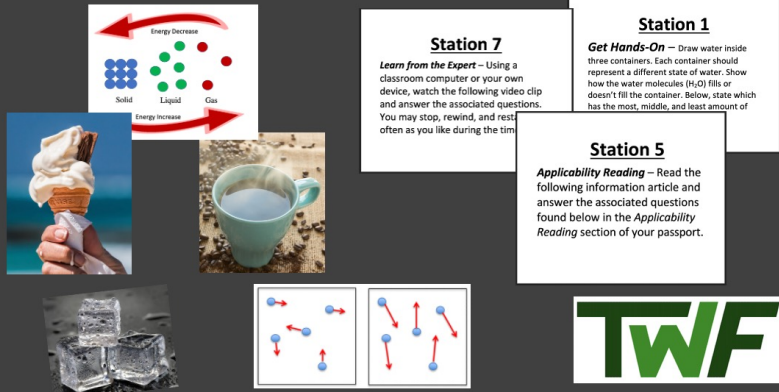


Matter and the Particle Theory

Interactive Lab Station Activity



Matter and the Particle Theory Lab Station Activity



7 Lab Station Activities to get your kids out of their seats and engaged in their learning.

Praise from lab station buyers

- "LOVE LOVE LOVE!!!"
- "Wow. Simply amazing!"
- "My students absolutely loved this and begged for more"
- "I cannot say enough good things about these lab stations. LOVE THEM. Perfect for a class period or when you don't want to set up a wet lab. I just adore these."
- "Students loved and stations and I loved the learning!"
- "Fantastic resource! My go to TPT user for science!!"
- "THIS WAS AN AWESOME ACTIVITY!"
- "Used this today and my freshman LOVED it! The lesson provides opportunities for the students to both be creative and demonstrate learning. They were engaged the whole time and passed in quality work. Will definitely be looking for your other station activities to use in my classroom."
- "Awesome resource. I am using this instead of a paper test. Much more inclusive learning!"

Interactive Lab Station Activity



Little to no prep, just print and go

7 Engaging Lab Stations



Each station tests your students' knowledge and provides a fantastic learning opportunity for your kids to learn through assessment

1. Get Hands-On
2. Research
3. Explain Yourself
4. Applicability Reading
5. Test Your Knowledge
6. Learn From The Expert
7. Become the Question Master

Save your time by utilizing dry labs that are all set to go. Just print and place them around the room



Station 1

Get Hands-On – Fusion energy would provide energy where places letter why

Station 2

Research – Using your search engine research: What are some common traits of example provide sure you

Station 3

Explain yourself – Write down an opinion to the following question in paragraph form. You are **NOT** permitted to use your device.

Station 9

Become the Question Master – You must create 2 multiple-choice questions, 2 true/false questions, and 1 short answer question that relates directly to the topic. You must also supply the answers and you may not re-use any of the questions you have seen in this lab.

Station 5

Applicability Reading – Read the following answer to found be Reading

Station 6

Test Your Knowledge – Answer the following 5 multiple choice ques expl cam

Station 7

Learn from the expert – Using a classroom computer or your own device, watch the following video clip and answer You may sto often as you

Station 4 Rest Station

Use this time wisely.
Complete any station work
not yet finalized.

Station 8 Rest Station

Use this time wisely.
Complete any station work
not yet finalized.

Save your time by utilizing dry labs that are all set to go. They can be placed around the room or uploaded to your virtual classroom

TWF

Learn from the Expert

Instructions: Go to watch the video. Scanning the QR code below will also take you to the video. While you are watching the video, answer each question and place your answer in the *Learn from The Expert* section of your passport. You may re-watch the video as many times as you like in the allotted time. Furthermore, you may re-watch the video while you are at one of the 'station complete' stations, so make sure you record the URL on your passport.

<https://tinyurl.com/5k7p8aee>



1. What is matter?
2. What is volume?
3. What are the three states of matter?
4. What is the example of a gas they gave in the video?
5. Explain the experiment the video used to prove that air has mass.

Applicability Reading – Cooking and Food Preservation: The Role of States of Matter

Cooking and food preservation techniques are practical applications of scientific principles, particularly those related to the states of matter. Two fundamental processes include freezing, which involves solidification, and boiling, which utilizes vaporization. This paper explores how manipulating the states of matter is critical in the preparation and preservation of food, extending its shelf life, and safeguarding against foodborne illnesses.

Cooking

Cooking is an age-old practice where heat is used to transform ingredients into edible and better tasting forms. One of the most common cooking methods is boiling, which utilizes the state change from liquid to gas. When water is heated to its boiling point of 100°C (212°F) at sea level, it undergoes



vaporization, turning from a liquid into steam. This process is essential for cooking foods like pasta, vegetables, and eggs. The heat transferred through boiling water or steam cooks food by breaking down complex molecules, softening fibers, and killing potentially harmful microorganisms. This not only makes food safe to consume but also enhances flavor, texture, and digestibility.

Steaming is another method where food is cooked through the vapor phase of water. It is a gentler technique as food does not come into direct contact with the boiling liquid. The steam's heat cooks the food while retaining more of its natural nutrients, which can be lost through boiling. The manipulation of water's states ensures that a variety of cooking methods can be employed depending on the desired culinary outcome.

Freezing

In contrast to the heat-intensive processes of cooking, freezing uses the solidification of liquids to preserve food. By bringing the temperature of food below its freezing point, typically at 0°C (32°F) for water-based liquids, it transitions into a solid state. This change drastically slows down the activity of enzymes and the growth of bacteria that lead to food spoilage. Freezing food acts like pressing a pause button, significantly extending its shelf life and maintaining nutritional quality.

The process of freezing is not as simple as it might appear; it requires controlled conditions to prevent the formation of large ice crystals, which can damage the cell structure of food, leading to unfavorable changes in texture and flavor once the food is thawed. Techniques such as flash freezing, where food is frozen rapidly, are employed commercially to preserve the quality and integrity of food products.



Canning

Boiling plays a critical role in canning, a method of preservation that involves sealing food in airtight containers. The canning process typically includes placing food in jars or cans, heating them to a temperature that destroys microorganisms and inactivates enzymes, and then sealing them to prevent recontamination. During this heating process, the contents of the container are brought to a boil, and any air is driven out of the container before sealing. This creates a vacuum seal that prevents the ingress of microorganisms, thus preserving the food for extended periods.

Station 1

Get Hands-On – Draw a plant cell using the organelles provided. Your cell should be circular and fill the available space on your passport. Each organelle's location and structure are provided. Place each into your drawing.

Station 5

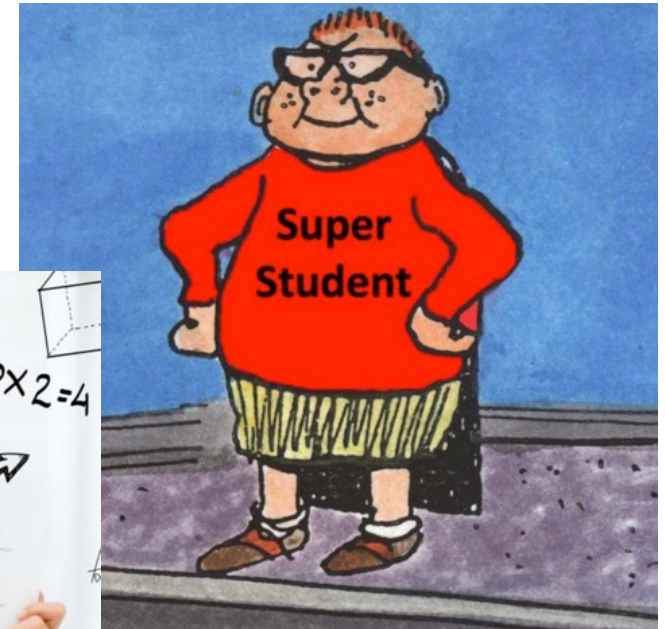
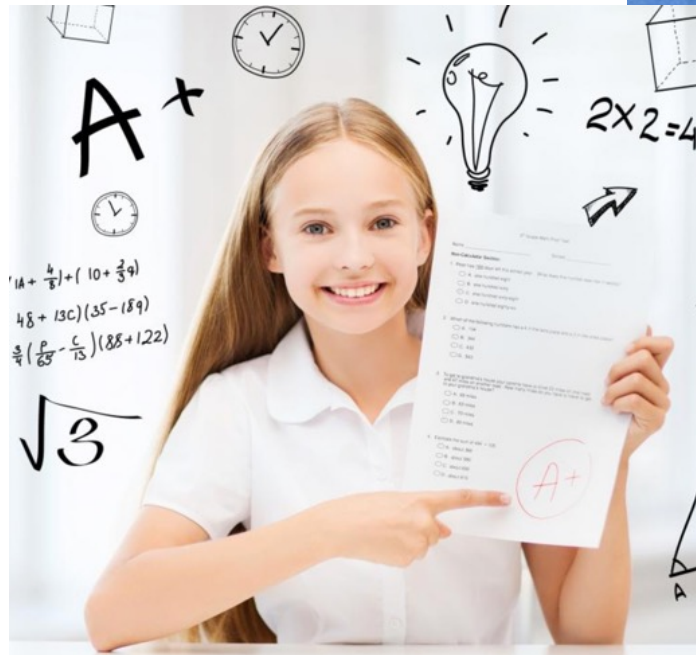
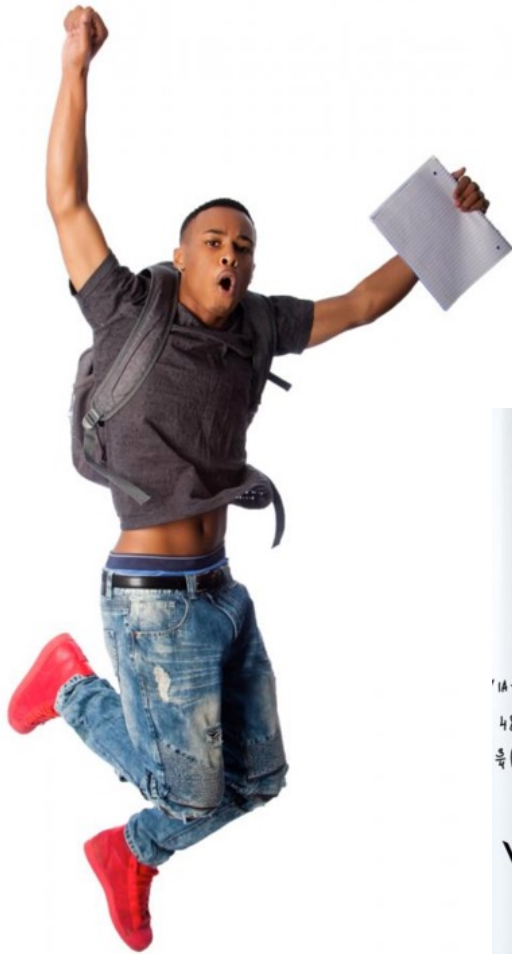
Applicability Reading – Read the following information article and answer the associated questions found below in the *Applicability Reading* section of your passport.

**If you'd like to download a
complete lab station to really see
what they look like, please visit the
link the below**

<http://bit.ly/TWF-Lab-Station>



Create engagement and let them reach their potential



TWF

Incorporate Technology and Increase Collaboration

