

## Chapter 1 : Physical Change Or Chemical Change Worksheets - Printable Worksheets

6. *Combining hydrogen and oxygen to make water is a physical change.* 7. *Breaking up concrete is a physical change.*  
8. *Sand being washed out to sea from the beach is a chemical change.* 9. *When ice cream melts, a chemical change occurs.* *Acid rain damaging a marble statue is a physical change.*

Students suggest to bend it, fold it, rip it, and shred it. As they share these suggestions, I carry out each idea so they can visually see the change that has taken place. Even though I changed the paper in a variety of ways, am I still left with paper? And it could be somewhat reversible. One idea is wetting it and another idea is burning it. Again, I carry out their idea; I wet the paper and place it next to the other pieces of paper I changed moments ago. Then I move on with the next idea, burning it. I say, "So, how many of you agree that burning the paper will change it?? Many hands raise and I hear a student say aloud, "are you really going to burn it? I tell them, they are not to do this at home and show them a pan of water that I am using to place the paper in immediately following the task. I light the small paper and let it burn for about 3 seconds and quickly place it in the pan of water. While I wait for it be completely cooled off, I ask the students, "What do you think you are going to see? I safely remove the burned paper from the pan of water. I hold it up and ask: What makes this change different from earlier? Did the shape, size, texture change? What about the color? But what about this burned paper? Can we do that? Why or Why not? Is there something new about this paper? I am leading them into recognizing the burned paper has new substance on it and when a new substance is created as a result of the changes made, it is a chemical change. Explain 15 minutes I explain to them, "we made changes to this paper, however, the changes we made are two different kinds. One is a physical change and the other is a chemical change. At the end of defining each type of change, I come back to our engage activity where students apply this new information to determine which paper went through a physical change and chemical change. Distinguishing Between Physical Change and Chemical Change Once we identify two kinds of changes in matter, physical and chemical, I move onto defining and explaining the differences. I provide them this information before so they are better prepared to identify changes as they investigate different interactions of matter at each station. We reflect on the changes we made to the paper and begin discussing properties to describe the changes made to the paper at the start of the lesson. As I review them, I ask my students to create a foldable in their interactive notebook to define each word. Connecting Vocabulary to Engage Activity After distinguishing these terms, I go back to the papers and ask them to think about the information about each kind of change we have discovered. We apply the information by re-examining the changes to the paper and discussing each term with our new knowledge. Through some discussions, we determine the paper that was bent, folded, ripped, etc. For the burned paper, we determine it went through a chemical change because we created a new substance on the paper which is irreversible. It serves as a reference when they have to conclude if the changes they observe at that station are physical and chemical.

4. Evaporation is a physical change. 5. Burning wood is a physical change. 6. Combining hydrogen and oxygen to make water is a physical change. 7. Breaking up concrete is a physical change. 8. Sand being washed out to sea from the beach is a chemical change. 9. When ice cream melts, a chemical change occurs.

Matter is conserved because atoms are conserved in physical and chemical processes. B , the fact that atoms are conserved, together with knowledge of the chemical properties of the elements involved, can be used to describe and predict chemical reactions. In this lesson students will recognize evidence of a chemical reaction and differentiate between chemical and physical changes. The Explore portion of the lesson has students observe a demonstration and create a mental model SP 2, Develop and using models that differentiates between chemical and physical changes. Students will also have to provide evidence to justify claims based on observations of a chemical and physical change. Crosscutting Concepts XC During this lesson students will recognize that energy and matter is an underlying crosscutting concept involved in all chemical reactions. During the Explain portion of the lesson students will receive notes that explain that chemical reactions can be endothermic and exothermic. This is not the main focus of this lesson, but as students continue to develop an understanding of chemical reactions throughout the unit they will build on the idea that matter and energy are part of chemical reactions. Demonstrations are an excellent way to help students create a mental model SP 2 that can be used to connect present thoughts to future learning. During the demo students will explore their understanding prior knowledge of different types of evidence that can explain whether a chemical or physical change has occurred. Even though many students come with background knowledge from middle school about chemical and physical changes, most still struggle with providing scientific evidence that back their claims. This demonstration helps students build their argumentation skills by asking them to justify their claims based on observations. This demonstration works well because students make the observation that water and sulfuric acid are the same substance because they are both clear and think nothing will happen. The following steps will explain the materials needed and how I perform the demo. Here is a YouTube video that can be shown if a hood is not present. Wear goggles and lab coat Perform in fume hood Handle concentrated sulfuric acid with care Do not touch finished demonstration product with bare hands; it contains sulfuric acid! Wait several minutes before placing demonstration in neutralizing solution. Do not throw carbon waste product in the garbage can; it contain sulfuric acid. Do this demonstration in a fume hood and stand back when it starts to react. The fumes given off are Sulfuric Acid. Add water to one of the sugar beakers and mix with glass stirring rod for minutes. Ask them to make observations about what is occurring and think about questions they have. After stirring, set aside Add conc. Sulfuric acid to other beaker until it just covers the sugar and mix with the stirring rod. You may need to add a little more sulfuric acid-up to 50 ml. When you feel the beaker heating up, stop stirring and put the beaker down in the crystallization dish The reaction takes several minutes to start to fully react. While the reaction is occurring ask them to make observations about what is occurring and think about questions they have. Let students gently touch the beaker so they can feel the exothermic reaction starting. Result should be a nice column of graphite. While the reaction is taking place have a discussion about the two reactions. After the reaction is completed let it sit 30 minutes before putting in a neutralizing solution of water and sodium bicarbonate. Acid neutralizer works too. The graphite column is saturated with sulfuric acid. It should be placed in a bucket of water and the whole thing neutralized with sodium bicarbonate. Then it can be dumped down the sink. Discussion While I am doing this demo I am talking about the difference between chemical and physical changes. Students typically have a lot of questions which I try to get them to answer through peer discussion. I also ask them to think about how they are asking questions. Are they open- or close-ended questions? This helps reinforce what we worked on in the first 3 lessons in this unit. What causes the snake to form? This will be explained later by showing them the chemical equation. What did you add to the beakers? It looked like water. Sulfuric Acid and water. After several student questions I ask them to state some differences between the two processes they observed. They typically say the water dissolved the sugar and it disappeared. Most students realize this is a physical change, but for the students that still struggle

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with this concept which there are always a few I ask them what would happen if I let this evaporate. They then realize that a chemical change requires more evidence than just something dissolving or disappearing in solution. I ask them what evidence do you have that a chemical reaction occurred when I mixed the other clear substance with the sugar? Heat, smoke water vapor, color change and a change in properties of the sugar. These are all good responses which leads to providing notes about evidence of chemical reactions during the next portion of the lesson. I will use this as reference during the notes to illustrate that a new substance was formed that produces gas. As they sit down I take volunteers to provide evidence of a chemical reaction. I also provide examples of each type of evidence as shown in the answer key. After all evidence and examples are provided, I ask what type of reaction gives off heat. This leads to filling in the energy portion of the graphic organizer with exothermic and endothermic. I add to this portion of the graphic organizer by providing information about energy in and energy out. Finally, I ask for volunteers to provide information about chemical equations. As they say the correct information I fill in the graphic organizer. This provides a simple, organized way for students to review chemical equations. It also acts as a review because some of the information they have seen in a previous lesson when they took notes on chemical equations. This will also be homework because we will not have time to complete it in class. To start this off I have students take a couple of minutes to answer questions After a couple of minutes I have them share their answers with the person next to them. This stimulates good conversation and requires students to provide evidence to justify their claim SP 7. I continue this same process with each section till the bell rings. Just before the bell rings I ask them to complete it for homework student work. The point value on this assignment is 10 points based on completion. The students need to be aware of how observations play a role in determining if a chemical reaction has occurred.

### Chapter 3 : Chemical and physical changes of matter. Science Worksheets and Study Guides Fifth Grade.

1. Label each process as a physical or chemical change: a. perfume evaporating on your skin b. butter melting c. wood rotting d. charcoal heating a grill.

### Chapter 4 : Physical and Chemical Changes Sorting Activity “ Middle School Science Blog

KEY: WORKSHEET ON CHEMICAL VS PHYSICAL PROPERTIES AND CHANGES Keep this in your binder as a study guide! Background: Keeping the difference between physical and chemical properties as well as changes can be a.

### Chapter 5 : ChemTeam Worksheet: Physical and Chemical Changes

Physical and Chemical Change Worksheet. Multiple Choice. For # 1 and 2, write a P for physical change, and a C for chemical change. \_\_\_\_\_ 1. A (Physical or Chemical) change is a change of matter from one form to another without a change in chemical properties. \_\_\_\_\_ 2.

### Chapter 6 : Physical & Chemical Changes Eighth 8th Grade Science Standards at I4C

Physical Change Or Chemical Change Worksheets - showing all 8 printables. Worksheets are Physical and chemical changes work, Physical and chemical changes work.

### Chapter 7 : Physical vs. Chemical Change (Grade 6) - Free Printable Tests and Worksheets - calendrierde

Physical Properties After your child fills in this review sheet on chemical and physical properties, it's a good idea to hold onto it for future test review! 5th grade.

### Chapter 8 : Lesson Day 1 Physical Vs Chemical Changes | BetterLesson

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*There are two types of changes in the world around us: physical and chemical. Physical changes. If you let ice melt, it turns into water. There has been a change of state from solid to liquid, but it is still the same substance. It is easy to freeze water and make it ice again. You can even boil it and make it steam.*

### Chapter 9 : Physical and Chemical Changes Worksheet - PDF documents

*This Physical and Chemical Changes in Everyday Life activity on physical and chemical changes in matter includes a "gallery walk", an activity to identify physical and chemical changes in everyday life, and a reinforcement (homework) worksheet.*