THE STRIVING

MUSLIM ACADEMY

Islamic and Academic Education

STAGE 5 · SCIENCE · PROPERTIES AND CHANGES OF MATERIALS

Properties and changes of materials

Everything the questions ask about is taught on the page before them, so nobody has to know the science beforehand.

WHAT IS INSIDE

- Comparing materials
- Dissolving, and getting it back
- Separating mixtures
- Changes you can undo, and changes you cannot
- Try it yourself
- How each one is worked

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4 topics · something to do at the end

Written for a parent teaching at home. No training assumed, and nothing else to buy.

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Dissolving, and getting it back

Read this first. Then answer the questions underneath.



When a solid dissolves in a liquid it spreads right through it, so evenly that you often cannot pick it out. The result is called a solution, and its molecules end up uniformly distributed among the molecules of the liquid.

Dissolved does not always mean invisible. Potassium dichromate dissolved in water forms a homogeneous orange solution: the same orange all the way through, and still plainly there.

The solid has not disappeared.

You can prove that by getting it back. Leave salty water in a warm place and the water evaporates, leaving the salt behind.

Not everything dissolves. Sand in water makes a mixture, not a solution, and the sand settles out on its own.

1. **What is the result of dissolving called?**
   One word.

2. **How do you get salt back from salty water?**
   The second paragraph.

3. **What does sand in water make?**
   Look for the word sand.

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Quick check

One right answer each, and every answer is somewhere in this pack. Ring the letter.



1. **Comparing materials What is transparency?**
   (A) Whether light goes through it (B) A solid that has not dissolved from a liquid (C) A change that makes a new material (D) A dissolved solid from its liqu

2. **Comparing materials What is solubility?**
   (A) Whether it dissolves in water (B) A dissolved solid from its liquid (C) Ash and smoke (D) Whether light goes through it

3. **Changes you can undo, and changes you cannot Name three reversible changes.**
   (A) Whether light goes through it (B) Melting, freezing and dissolving (C) A mixture, not a solution (D) A solid that has not dissolved from a liquid

4. **Separating mixtures What does sieving separate?**
   (A) Whether it dissolves in water (B) Pieces of different sizes (C) A dissolved solid from its liquid (D) A mixture, not a solution

5. **Separating mixtures What does evaporating separate?**
   (A) A mixture, not a solution (B) A solution (C) A dissolved solid from its liquid (D) Whether light goes through it

6. **Changes you can undo, and changes you cannot What does burning wood make?**
   (A) A dissolved solid from its liquid (B) A solid that has not dissolved from a liquid (C) Ash and smoke (D) A mixture, not a solution

7. **Dissolving, and getting it back What is the result of dissolving called?**
   (A) Whether light goes through it (B) A mixture, not a solution (C) A solution (D) A dissolved solid from its liquid

8. **Dissolving, and getting it back What does sand in water make?**
   (A) Melting, freezing and dissolving (B) A solid that has not dissolved from a liquid (C) A solution (D) A mixture, not a solution

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How each one is worked

The answers to the **work it out** questions are model answers. A child who says something different and can show you where on the page it came from has done the work.



COMPARING MATERIALS

1. What is solubility?

1. The passage says solubility is whether it dissolves in water.
2. So that is the answer.

Answer: **Whether it dissolves in water**

2. What is transparency?

1. The passage says transparency is whether light goes through it.
2. So that is the answer.

Answer: **Whether light goes through it**

3. What does a fair test do?

1. The passage says a fair test changes one of these at a time and keeps everything else the same.
2. So that is the answer.

Answer: **Changes one of these at a time and keeps everything else the same**

4. WORK IT OUT **Why is a test that changes two things at once no use?**

1. A fair test changes one thing at a time.
2. If two things change, the result could be from either.
3. So the test cannot answer the question it was set.

Answer: **Because you cannot say which difference caused the result**

DISSOLVING, AND GETTING IT BACK

1. What is the result of dissolving called?

1. The passage says the result is called a solution.
2. So the answer is **a solution**.

Answer: **A solution**

2. How do you get salt back from salty water?

1. The passage says leave salty water in a warm place and the water evaporates, leaving the salt behind.
2. So that is the answer.

Answer: **Leave salty water in a warm place and the water evaporates**

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SAMPLE PAGES

You have read a few pages. The pack is longer.

What you are holding is a short sample, taken from different parts of the pack so that you can see how a week is planned and what a child is actually asked to do, before you decide.

The complete pack, and the rest of the academic materials, are on our website: schemes of work for a parent teaching at home, and practice packs for the skills children get stuck on.

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Islamic and Academic Education

Members of the homeschool community do not buy these. If you have joined the community, the pack for the term you are working on is given to you at no cost.

Our Islamic Education classes are free. These packs are part of what pays the teachers who teach them.