WHAT IS A SUSPENSION?

13c

suspension: a mixture that settles out

sediment: material that settles to the bottom of its container; for example, clay, sand, pebbles, and rocks in a stream

AIM 13 | What is a suspension?

Before you pour orange juice, you shake it. Before you spoon out vegetable soup, you stir it.

Orange juice and vegetable soup are mixtures. But they are not like liquid solutions. The parts of liquid solutions dissolve and do not settle. Mixtures like orange juice and vegetable soup do *not* dissolve. The parts *do* settle out.

Mixtures that do *not* dissolve and that *do* settle are called *suspensions* [suss PEN shunz].

You have many suspensions in your home. Salad dressing and fruit juices are suspensions. So is liquid shoe polish.

Look in your medicine cabinet. Some bottle labels may say "Shake well before using." These bottles contain suspensions. In fact, any mixture that you see settling or that needs mixing is a suspension.

Many common suspensions are made of solids and liquids. But a suspension can be made of solids and gases, too.

The parts of a suspension settle by weight. The heavy parts settle first. Then the lighter parts settle.

Now you know two important properties of suspensions:

(a) Suspensions do not dissolve.

(b) The parts of a suspension settle out. They separate into layers by weight.

You will study more properties of suspensions in the next Aim.

CLAY AND WATER

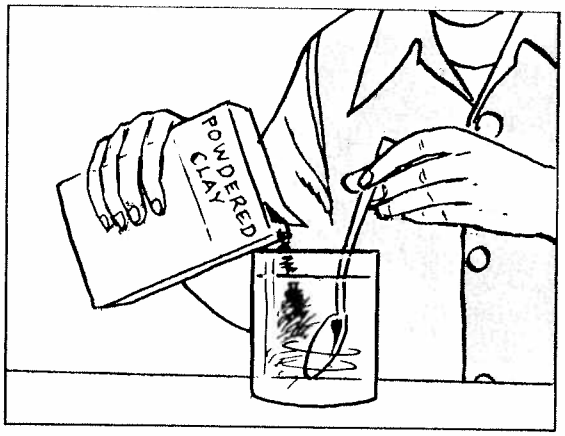

Figure A

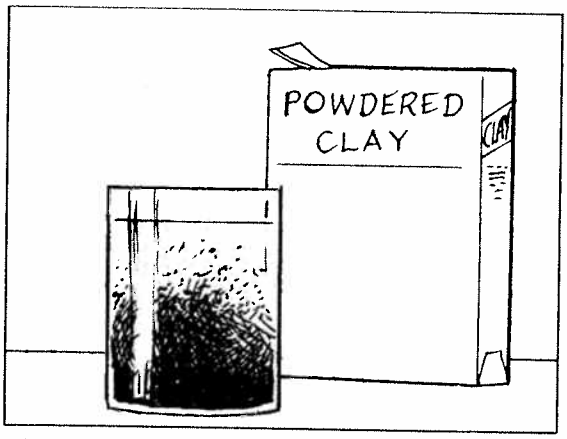

Figure B

TRY THIS!

Stir some powdered clay into a jar of water. Let it stand. Notice what happens.

1. Powdered clay in water _____ a mixture.
   (is, is not)

2. The clay _____ dissolve.
   (does, does not)

3. The clay pieces _____ settle.
   (do, do not)

4. Clay in water makes a mixture called a _____.
   (liquid solution, suspension)

5. The parts of a suspension _____ dissolve.
   (do, do not)

6. The parts of a suspension _____ settle out.
   (do, do not)

WHICH SETTLES FIRST?

TRY THIS!

Place some pebbles, sand, and powdered clay into a jar (Figure C).

Add water nearly to the top.

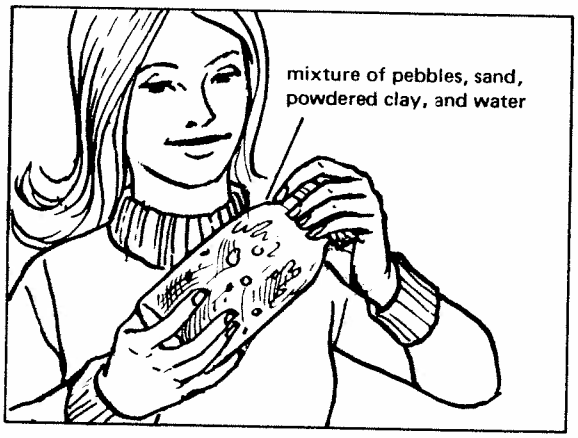

Figure C

Cover the jar tightly and shake.

Let it stand for five minutes. Observe what happens.

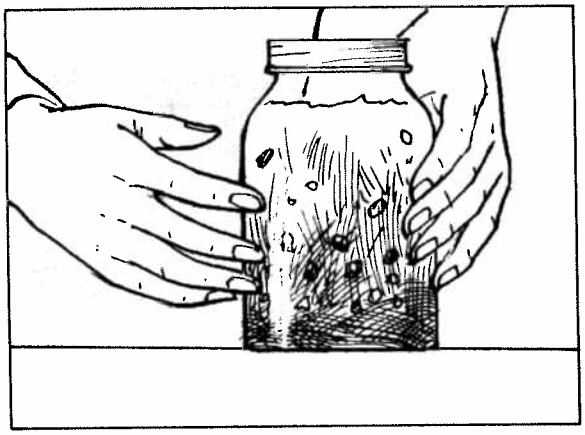

Figure D

1. Did the pieces settle in layers?

   _____

2. Complete Figure E. Show the layers. Label them.

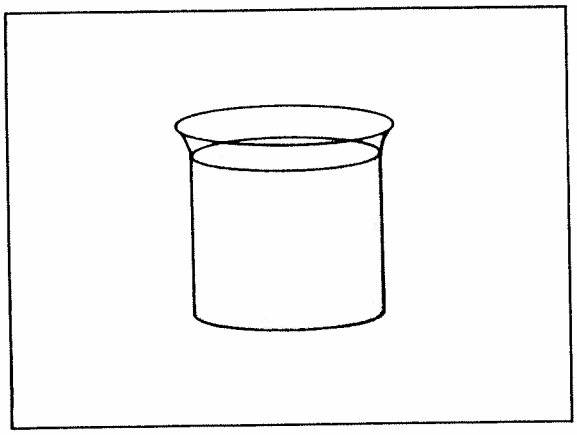

Figure E

3. **a)** Which pieces settled first? _____

   b) They are the _____ (largest, smallest) pieces.

   c) They also are the _____ (lightest, heaviest) pieces.

4. **a)** Which settled last? _____

   b) They are the _____ (largest, smallest).

   c) They also are the _____ (lightest, heaviest).

5. This shows that when a suspension settles, the _____ (heavy, light) pieces settle first; the _____ (heavy, light) pieces settle last.

6. Usually, the heavy pieces are _____ (small, large); the light pieces are _____ (small, large).

HOW IS SEDIMENT DEPOSITED?

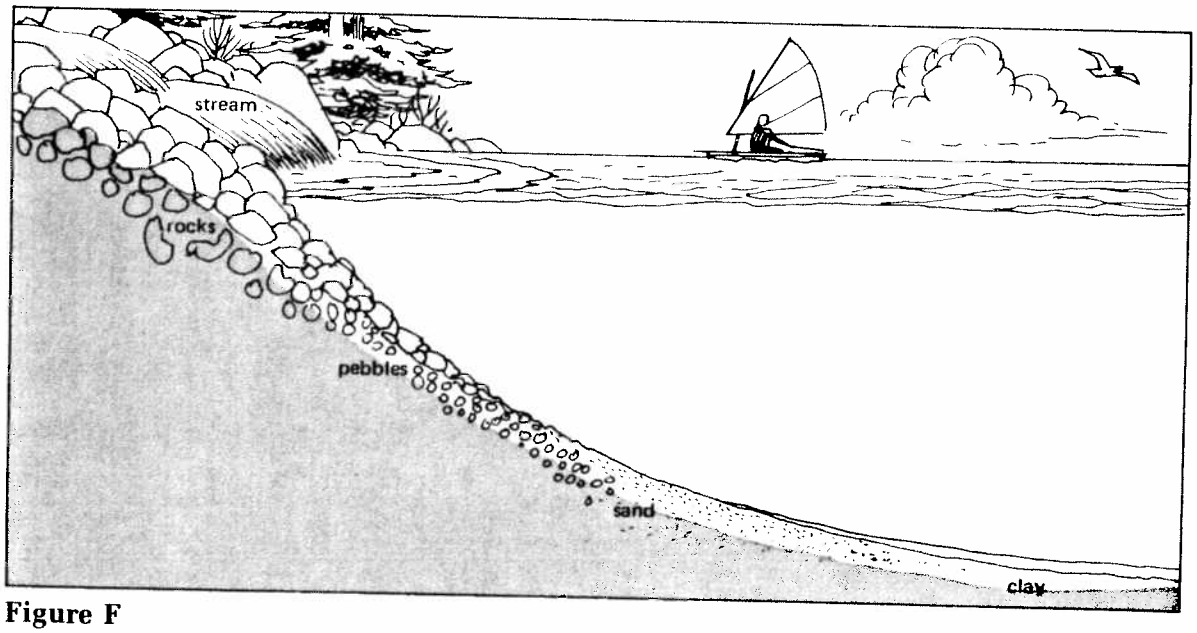

Figure F

Streams pick up and carry *sediment* like sand, rocks, clay, and pebbles. Streams deposit this sediment where they empty.

1. Name some kinds of sediment streams carry.

   _____ _____ _____ _____

2. The _____ are deposited first because they are the _____ .
   heaviest, lightest

3. The _____ is deposited last because it is the _____ .
   heaviest, lightest

4. The _____ are deposited closest to the shore.

5. The _____ is deposited farthest from shore.

6. List the sediments in the order that they are deposited: _____ ,

   _____ , _____ , _____ .

COMPARING SOLUTIONS AND SUSPENSIONS

Use what you have learned about solutions and suspensions to fill in this chart.

	Solutions	Suspensions
Do the parts dissolve? (yes or no)		
Do the parts settle? (yes or no)		

MATCHING

Match the two lists. Write the correct letter on the line next to each number.

1. _____	liquid solutions	**a)**	parts do not settle
2. _____	suspensions	**b)**	settle last
3. _____	heavy pieces	**c)**	kinds of mixtures
4. _____	light pieces	**d)**	parts do settle
5. _____	liquid solutions and suspensions	**e)**	settle first

TRUE OR FALSE

Write T on the line next to the number if the sentence is true. Write F if the sentence is false.

1. _____ Liquid solutions are mixtures.

2. _____ Suspensions are mixtures.

3. _____ Liquid solutions and suspensions are the same kinds of mixtures.

4. _____ The parts of liquid solutions are dissolved.

5. _____ The parts of suspensions are dissolved.

6. _____ Liquid solutions settle out.

7. _____ Suspensions settle out.

8. _____ Suspended pieces always settle at the same time.

9. _____ Suspended pieces settle by weight.

10. _____ In a suspension, heavy pieces settle last.

REACHING OUT

Sometimes, streams *flood* onto land areas. They leave sediment behind.

What is this land good for? _____

_____