

Name: \_\_\_\_\_ Date: \_\_\_\_\_

## Soapy Stress Worksheet

1. **Tensional Stress.** Draw a picture of the soap and how it was broken. Draw arrows for the forces acting on the soap to show that you know it was tensional stress.

Observe and describe the area where the soap broke.

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What is a real life example of tensional stress?

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2. **Compressional Stress.** Draw a picture of the soap and how it was broken. Draw arrows for the forces acting on the soap to show that you know it was compressional stress.

Observe and describe the area where the soap broke.

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What is a real life example of compressional stress?

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3. **Shear Stress.** Draw a picture of the soap and how it was broken. Draw arrows for the forces acting on the soap to show that you know it was shear stress.

Observe and describe the area where the soap broke.

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What is a real life example of shear stress?

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4. **Force Analysis.** Try to break a rock in the same types of ways you broke the soap. Why is it harder to do? Use the word “force” in your answer.

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True or False: Geotechnical engineers *measure* the amount of force it takes to break a rock using specialized and expensive equipment.

#### **BONUS PROBLEM**

5. **Combination stresses.** Draw a picture of the soap and how it was broken when you bent it, using both compressional and tensional stresses. Include force arrows and label with a C the arrows that show compression and with a T the arrows that show tension.

Observe and describe the area where the soap broke.

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