DATE: NAME: CLASS:

CHAPTER 9	Launch Lab: Hot Packs and Cold Packs	BLM 9.0.2
HANDOUT		

A cold pack helps reduce swelling in sore muscles after a long-distance race. Commercially available hot and cold packs are useful for first-aid treatment when ice and hot water are not readily available. You can make simple hot or cold packs using only a soluble salt (ionic compound), water, and a suitable container. In this Launch Lab, you and your group will recall what you know about endothermic and exothermic processes to design a hot or cold pack using only these materials.

Safety Precautions

- Some salts are toxic and corrosive. If you spill any on your skin, immediately rinse with plenty of water.
- Large amounts of heat may be generated if large quantities of salts are used.
- Dispose of your solutions as instructed by your teacher.
- Your teacher may choose to carry out this investigation as a demonstration.

Materials

- a variety of soluble ionic compounds
- water
- common household containers and resealable bags
- balance

Procedure

1. With your group, come up with an initial design for your hot or cold pack that will allow you to scientifically test the salts for their effectiveness at absorbing or releasing heat.

Launch Lab: Hot Packs and Cold Packs (continued)

2. Construct a data table to record appropriate data.

3. Choosing one of the salts, test your design.

4. Refine your design if necessary.

5. Using your refined design, test one of the salts for suitability as a hot or cold pack.

6. Repeat Procedure Step 5 for the other available salts.

7. Dispose of the waste as directed by your teacher.

Analysis

1. Based on your data, which salt would make the best hot pack? Why? Which would make the best cold pack? Why? Use the terms endothermic or exothermic in your answers.

Launch Lab: Hot Packs and Cold Packs (continued)

2. Are there any safety concerns you should consider? Explain.

3. If you were to prepare these hot or cold packs commercially, what design changes would you like to make? Explain.