

# Hot and Cold

## Summary

Students study the energy associated with physical and chemical changes. The activity consists of observing nine phenomena.

## Time Frame

1 class periods of 90 minutes each

## Group Size

Pairs

## Materials

- [student instructions/worksheet](#)  
(attached)  
per group:  
acetone in dropper bottles  
alcohol in dropper bottles  
concentrated sulfuric acid in dropper bottles  
6 M HCl in dropper bottles  
6 M NaOH in dropper bottles spatula of NaOH  
2 spatula of  $\text{NH}_4\text{Cl}$   
spatula of  $\text{Ba}(\text{OH})_2$   
spatula of  $\text{CaCO}_3$   
spatula of anhydrous  $\text{CuSO}_4$

## Instructional Procedures

Step-by-step instructions and procedures are found on the student instruction sheet attached.

## Bibliography

Lesson Design by Jordan School District Teachers and Staff.

## Authors

[Utah LessonPlans](#)