

**Student activity sheet**  
**Activity 5.7**

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

## Color changes with acids and bases

### How can you tell if a substance is an acid, a base, or neutral?

Red cabbage indicator turns pink or purplish pink when acids are added to it, turns greenish-blue when bases are added, and remains blue when neutral substances are added. Do this experiment to find out if cream of tartar, laundry detergent, and vinegar are acids, bases, or neutral.

#### Set-up the experiment

##### Procedure

1. Follow your teacher's directions to make red cabbage indicator solution.
2. Label 4 empty clear plastic punch cups **indicator + cream of tartar**, **indicator + detergent**, **indicator + vinegar**, and **control**.
3. Carefully pour 2 tablespoons of indicator solution into each cup.
4. Place the four labeled cups on a white piece of paper.



#### Conduct the experiment

##### Procedure

##### Cream of tartar

1. Use the flat end of a toothpick to scoop up a small amount of cream of tartar. Add the cream of tartar to the *indicator + cream of tartar* cup.
2. Gently swirl to mix. Observe any color change in the cup and record this in the chart below.



##### Laundry detergent

3. Use the flat end of a toothpick to scoop up a small amount of laundry detergent. Add the detergent to the *indicator + detergent* cup.
4. Gently swirl to mix. Observe any color change in the cup and record this in the chart below.

##### Vinegar

5. Use a dropper to add 1 drop of vinegar to the *indicator + vinegar* cup.
6. Gently swirl to mix. Observe any color change in the cup and record this in the chart below.

Substance	Color of indicator + substance	Is this substance an acid, base, or neutral?
Cream of tartar		
Laundry detergent		
Vinegar		