Name _____ Date _____

Acids, Bases, and Salts

Section 1 Acids and Bases

CHAPTER 22 DRW

Skim *Section 1. Look at the headings, photos, illustrations, and captions. Write three questions you have about the information you think may be covered in this section. Try to answer your questions as you read.*

Question: _____

Answer: _____

Question: _____

Answer: _____

Question: _____

Answer: _____

Review Vocabulary

electrolyte

Define electrolyte *to show its scientific meaning.*

_____

_____

New Vocabulary

Read the definitions below. Then write the key term for each one in the left column.

_____ substance that produces hydrogen ions (H^+) in a water solution

_____ H_3O^+ ions that are formed when an acid dissolves in water and H^+ ions interact with water molecules

_____ an organic compound that changes color in acid and base

_____ OH^- ion formed when bases dissolve in water

_____ any substance that forms hydroxide ions, OH^- in a water solution

Academic Vocabulary

predict

Use a dictionary to define predict *to show its scientific meaning.*

_____

Name _____ Date _____

Section 1 Acids and Bases (continued)

Main Idea — **Details**

Acids

I found this information on page _____.

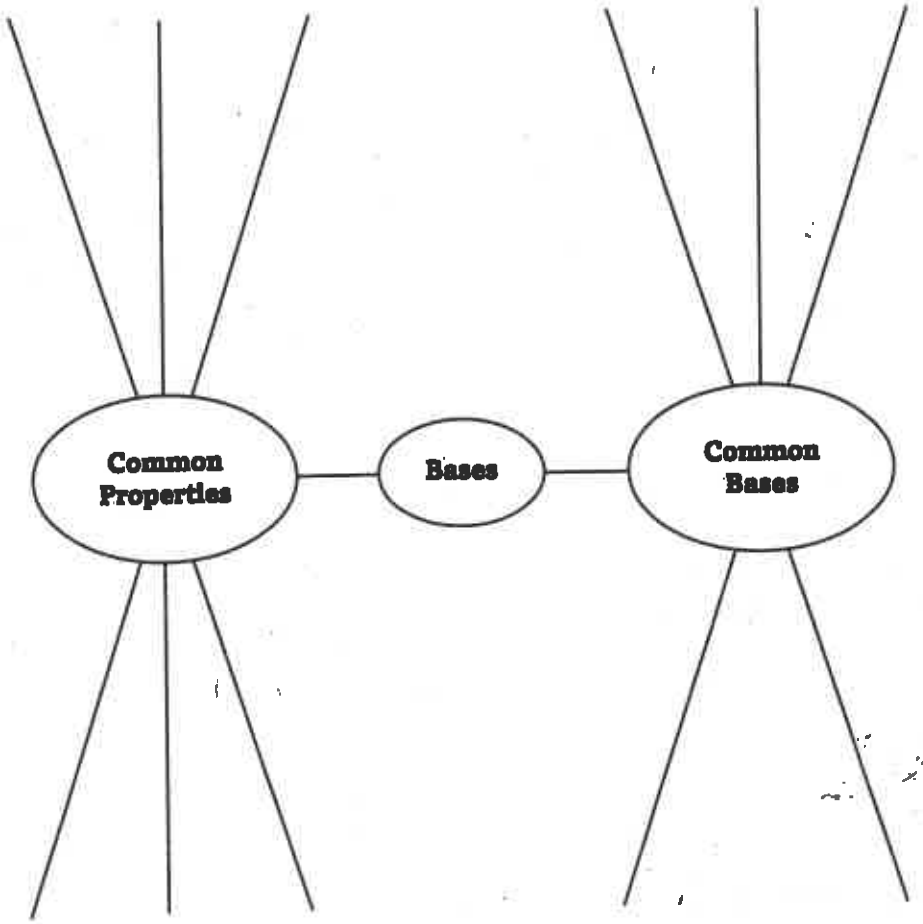
Organize *information about* **acids** *using the table below.*

Acids	
Definition:	Four Common Properties:
Four Common Acids:	Four Uses of Acids:

Bases

I found this information on page _____.

Identify *a fact or example about* **bases** *on each line.*



Name _____ Date _____

Section 1 Acids and Bases (continued)

Main Idea

Solutions of Acids and Bases

I found this information on page _____.

Details

Create *one review question dealing with the* **dissociation of acids** *and one review question dealing with the* **dissociation of bases.** *Give answers to your two questions.*

1. Question: _____

   Answer: _____

2. Question: _____

   Answer: _____

I found this information on page _____.

Model *an* **ammonia molecule** *and a* **water molecule.** *Show what happens during dissociation.*

Analyze *how ammonia can be a base even though it does not contain –OH.*

_____

_____

_____

_____

CONNECT IT

The smell of fish is caused by a base. Hypothesize why lemon juice can be used to neutralize the smell of fish.

_____

_____

_____

Name _____ Date _____

Acids, Bases, and Salts

Section 2 Strength of Acids and Bases

Predict *Look at the headings in Section 2. Write two predictions about what you will learn in this section.*

1. _____

_____

2. _____

_____

Review Vocabulary

ionization

Define ionization *in a sentence to show its scientific meaning.*

_____

_____

_____

New Vocabulary

Read the definitions below. Then write the key term for each one in the blank in the left column.

_____ an acid that dissociates almost completely in solution

_____ an acid that only partly dissociates in solution

_____ a base that dissociates completely in solution

_____ a base that does not dissociate completely in solution

_____ solutions containing ions that react with added acids or bases to decrease their effects on pH

_____ a measure of the concentration of H^+ ions in a solution

Academic Vocabulary

conduct

Use a dictionary to define conduct *as a verb in science.*

_____

_____

Name _____ Date _____

Section 2 Strength of Acids and Bases (continued)

Main Idea | **Details**

Strong and Weak Acids and Bases

I found this information on page _____.

Analyze *information about* **strong** *and* **weak acids** *and bases.*

	Equation for Dissociation	Arrow Directions Demonstrate
Weak acid		
Weak base		
Strong acid		
Strong base		

I found this information on page _____.

Evaluate *why acids are able to conduct electricity. Then describe which types of acids are better conductors and why.*

_____

_____

_____

I found this information on page _____.

Contrast *the terms weak and dilute as they describe acids and bases.*

Weak	Dilute

Describe *what the particles of an acid or base would look like with each combination of characteristics listed below.*

	Concentrate	Diluted
Weak	There are many particles, but not all are dissociated ions.	
Strong		

Name _____ Date _____

Section 2 Strength of Acids and Bases (continued)

Main Idea	Details
pH of a Solution *I found this information on page* _____.	**Model** a pH scale *from 0 to 14. Then complete the following:* • Circle and label a neutral pH. • Use arrows to show which direction indicates more acidic and which direction indicates more basic. • Circle and label the pH level with the highest concentration of H^+ ions and the pH level with the lowest concentration of H^+ ions.
I found this information on page _____.	**Analyze** *how* buffers *allow you to eat acidic and basic foods without changing your blood pH.*

CONNECT IT People with fish tanks test the water regularly to check its pH. Predict what the fish owner would do if the water were too acidic or too basic. Predict how these conditions might affect the fish.

Name _____ Date _____

Acids, Bases, and Salts

Section 3 Salts

Scan *Use the checklist below to preview Section 3 of your book.*

- Read all section titles.
- Read all bold words.
- Read all charts and graphs.
- Look at all the pictures and read their captions.
- Think about what you already know about acids, bases, and salts.

Write two facts you discovered about acids, bases, and salts as you scanned the section.

1. _____

2. _____

Review Vocabulary

Define nonpolar molecule *to show its scientific meaning.*

nonpolar molecule _____

_____

New Vocabulary

Define the following key terms.

neutralization _____

_____

salt _____

_____

titration _____

_____

soap _____

_____

Name _____ Date _____

Section 3 Salts (continued)

Main Idea	Details
Neutralization, and Salts *I found this information on page* _____.	**Identify** *the* acid, base, salt, *and* water *in the* neutralization reaction *below.* $HCl + NaHCO_3 \longrightarrow NaCl + CO_2 + H_2O$ _____ _____ _____ _____
I found this information on page _____.	**Complete** *the graphic organizer describing the formation of a salt.* negative ions from an acid + [ ] → salt
Titration *I found this information on page* _____.	**Sequence** *the steps used to find the* concentration of an acid solution by titration. *The last step has been completed for you.* [ ] ↓ [ ] ↓ Use the volume of base used and the known concentration of the base to calculate the concentration of the acid.

CONNECT IT **Imagine that there were no salts available for manufacturing or personal use. Describe three ways your life might be different.**

_____

_____

_____

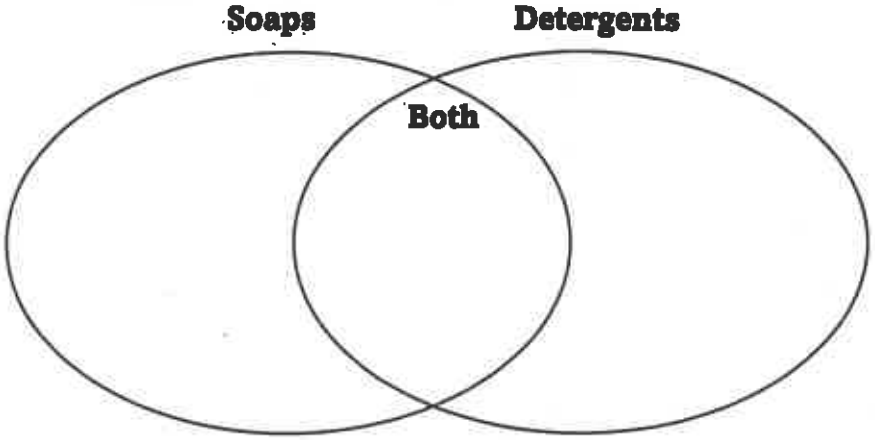
_____

_____

Name _____ Date _____

Section 3 Salts (continued)

Main Idea	Details
Soaps and Detergents *I found this information on page* _____.	**Compare and contrast** *characteristics of* **soaps** *and* **detergents** *in the Venn diagram below.* • contain a sulfonic acid group • have carboxylic acid • have long hydrocarbon chains • insoluble in hard water • may cause excess foam • made from fatty acids • made from petroleum molecules • makes soap scum • used for cleaning



Main Idea	Details
Soaps and Detergents *I found this information on page* _____.	**Explain** *the relationship between detergents, soap scum, and hard water.*

SYNTHESIZE IT

Design a simple experiment to show how neutralization works using a natural indicator with a kitchen acid and a kitchen base.