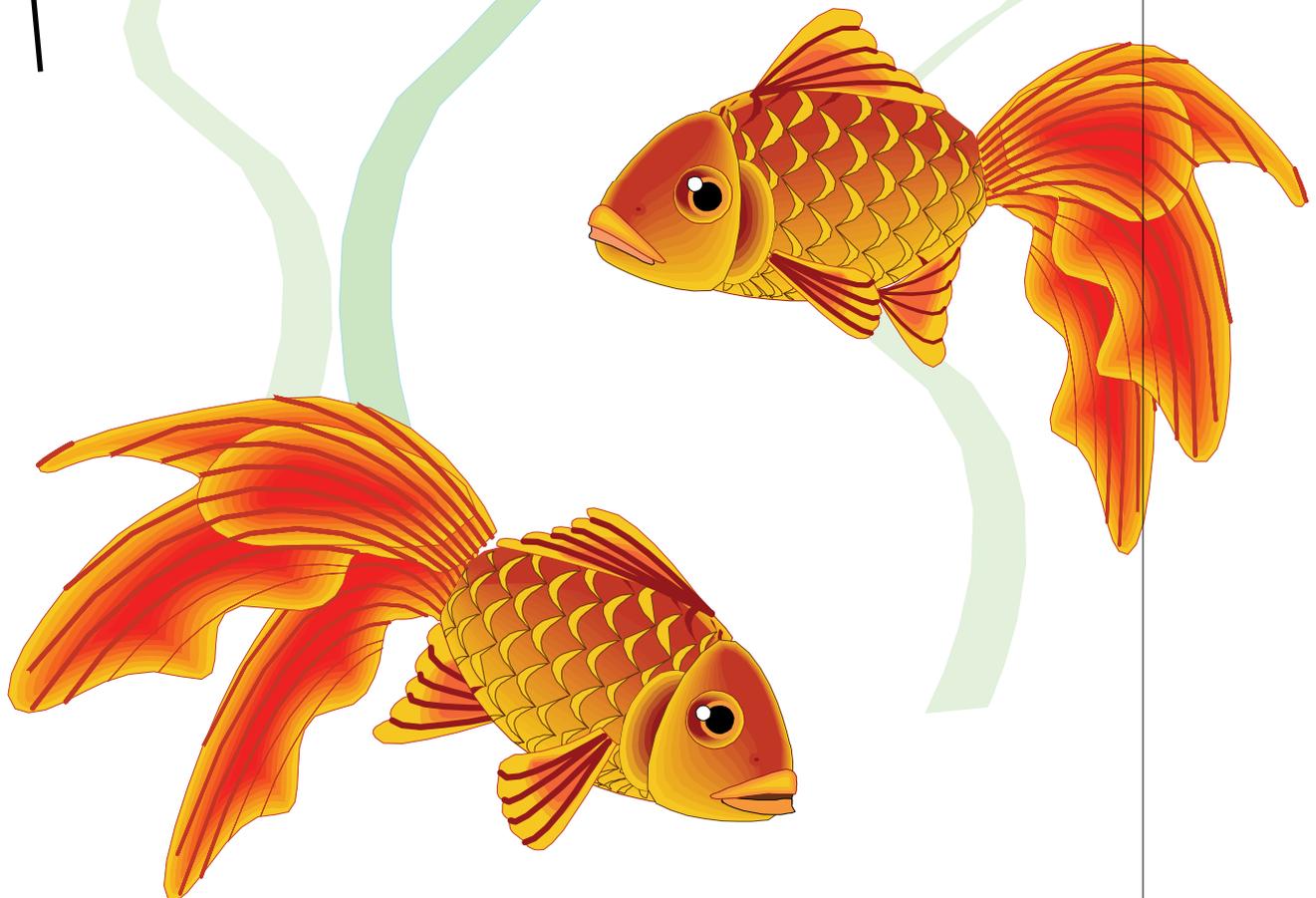


# GOLD RUSH

A KID'S GUIDE TO  
GOLDFISH CARE



# WELCOME TO GOLD RUSH!

Welcome to “Gold Rush”, a kid’s beginner guide to keeping goldfish. As you care for your goldfish, you will have the experience and excitement of helping an animal grow. Inside this booklet, you’ll find information and tips for setting up your aquarium, stocking and taking care of your fish, and testing your water quality. With close attention to the care of your fish and aquarium, maybe your goldfish can win “Best of Show”!

## TABLE OF CONTENTS

Have We Met?	
History of the Goldfish.....	2
What’s a Variety?.....	2
Ideal Physical Features of a Goldfish .....	2
Goldfish Guts .....	3
Home Sweet Home	
Aquarium Materials .....	4
Location, Location, Location .....	4
Setting Up Your Aquarium.....	4
Stocking Your Fish.....	5
Your Tank Needs Care, Too! .....	5
Splish Splash	
Water, Water Everywhere.....	6
Tips for Good Water Quality.....	7
Let’s Eat!	
The Basics.....	8
What’s For Dinner .....	8
Breakfast & Supper.....	9
Just Enough! .....	9

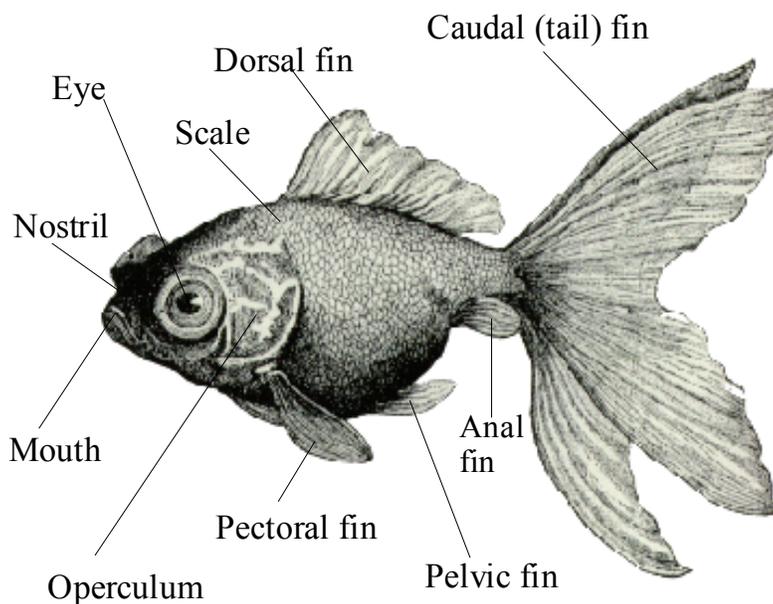
# HAVE WE MET?

## History of the Goldfish

Goldfish were first discovered in China about 1500 years ago. At that time, goldfish were a dull, greenish color. It was actually several hundred years later before they developed the bright “gold” or orange color that we usually see today. This special gold color was considered very rare and sacred, and people were forbidden to catch these fish. In the 1100s, the Chinese Emperor Gaozong became extremely fond of goldfish and started to raise them in ponds. As the years passed, the popularity of goldfish spread rapidly throughout China. New varieties of goldfish developed from mutations in head, fin, and body shapes, eye positions, colors, and other features. Today there are over 100 varieties of fancy goldfish. In China, they have come to symbolize peace, friendship, and good fortune.



Goldfish culture began in China almost 1000 years ago.



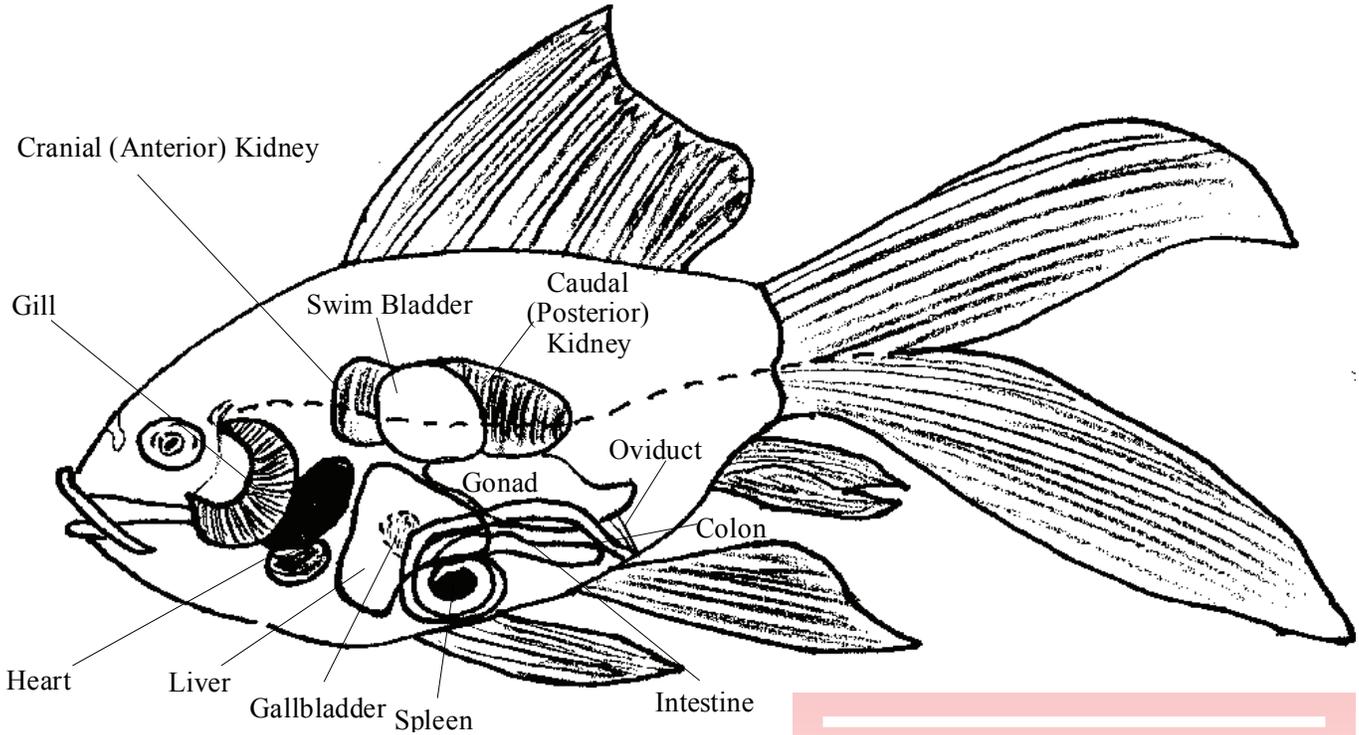
External anatomy of a goldfish

## What's a Variety?

We say that there are over 100 varieties of goldfish today, but what actually makes a variety? A variety is simply a combination of different body parts in different shapes, positions, or colors. For example, a goldfish may have a cap on its head—a variety called an “oranda”—or big sacs under its eyes—a “bubble eye” goldfish. The fish can even have nostril folds called pompons or hardened, puffy-like scales called pearl scales. The color of fancy goldfish can range from solid black, red, yellow, orange, or white to any combination of these colors. Fin number, size, and shape can also be different from variety to variety. Although you may be familiar with goldfish with long, narrow bodies, fancy goldfish are often short and round like a ball or egg.

### ***Ideal Physical Features of a Goldfish:***

- ◆ Active and healthy appearance—swims energetically and smoothly
- ◆ Good balance and position in the water when not swimming
- ◆ Dorsal fin upright and spread backwards
- ◆ Caudal fin open and spread out
- ◆ Pectoral fins even in size
- ◆ Pelvic fins even in size
- ◆ No red veins in fins
- ◆ Bright and contrasting colors



Internal anatomy of a goldfish

What organ does a goldfish NOT have?

(See answer on last page)

### Goldfish Guts

- ◆ Cranial (Anterior) and Caudal (Posterior) Kidneys: fish blood is made and filtered here
- ◆ Colon: last part of the intestine; where food is processed for the last time
- ◆ Gallbladder: storage place for things made by the liver that are used to break down fat in the food
- ◆ Gills: used for breathing and release of waste products
- ◆ Gonads: where eggs are made in female fish and sperm are made in male fish
- ◆ Heart: the muscle that pumps blood throughout the body
- ◆ Intestine: part of the body where food is digested/broken down so that it can be used by the body
- ◆ Lateral Line: uses pressure and sound waves to let a fish "feel" things in the water without touching them
- ◆ Liver: VERY important organ that does many things, including helping to digest food, breaking down harmful chemicals in the body, storing sugar and fat for use as energy, and much more!
- ◆ Oviduct: the tube through which the eggs from the female goldfish leave her body
- ◆ Spleen: fish blood is also made here
- ◆ Swim Bladder: organ in fish which can be filled with more or less air; used by the fish to stay at a certain level in the water

# HOME SWEET HOME

## Aquarium Materials:

- ◆ 10 gallon aquarium
- ◆ Lighted hood
- ◆ 10 pounds of gravel
- ◆ Filter and filter bags
- ◆ Air pump
- ◆ Air stone
- ◆ Air line
- ◆ Thermometer
- ◆ Siphon
- ◆ Dip net
- ◆ Dechlorinator (Water Conditioner)



### Location, Location, Location!

You'll need to set your aquarium on a stand or table away from a window with direct sunlight and away from cool drafts. Make sure to use a very strong table since water weighs a lot. Your aquarium will weigh almost 100 pounds once it is full of water and the gravel has been added! Do not put your aquarium on a table that can be damaged if water sits on it for a long period of time. You will need three electric sockets to power your filter, light, and air pump.

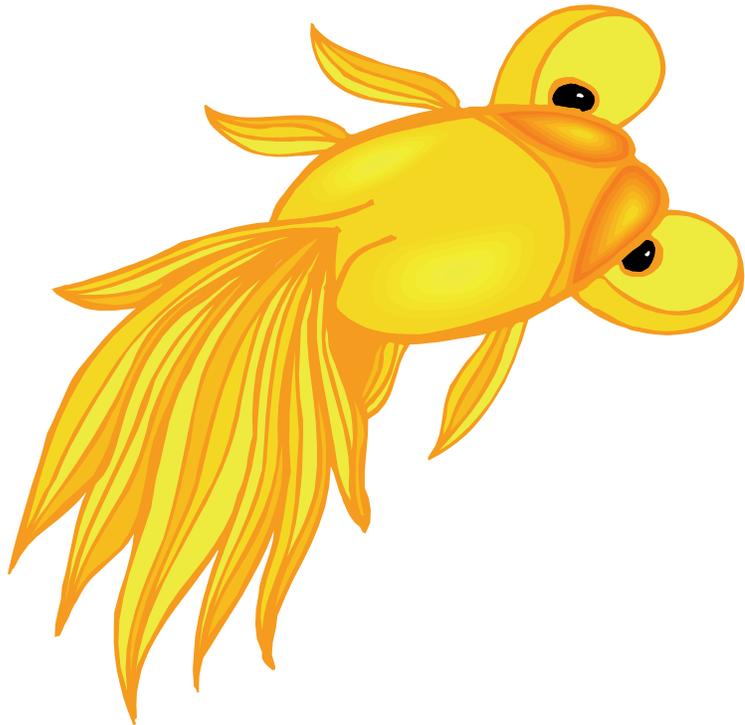
### Setting Up Your Aquarium

- ◆ Rinse the aquarium, gravel, and any decorations very well (do not use any cleaners such as soap).
- ◆ Place your aquarium on a stand or strong table that will not be damaged if it gets wet.
- ◆ Spread the gravel over the bottom of the tank and, if wanted, add decorations.
- ◆ To keep the gravel from being stirred up, place a clean bowl on top of the gravel. Pour water into the bowl and let it overflow gently until the water is about 3" from the top of the aquarium. Add dechlorinator to the water.
- ◆ Connect your check valve to the air line. Check the package directions for correct placement.
- ◆ Connect your air stone to the air line.
- ◆ Connect the air line to the air pump.
- ◆ Rinse the filter bag or cartridge and place it into your filter according to the instructions included with the filter. Add your filter to the back of your aquarium.
- ◆ Finish filling your aquarium up with water to 1/2" below the top and remove the bowl. Adjust your gravel and decorations as needed.
- ◆ Pour a cup of water into the filter.
- ◆ Put the cover on the aquarium.
- ◆ Plug in the filter, light, and air pump. (Make sure your hands are dry!)
- ◆ Allow the filter on your aquarium to run one to two weeks before stocking your fish.

## Stocking Your Fish

Once you've set up your aquarium and let the filter run for a week or two, you are ready to put your fish into their new home. It is very important not to dump your goldfish straight from the bag into your tank. The water quality in your tank is often much different than the water quality in the bag of fish you brought home. Fast changes in temperature, pH, and water hardness can stress your fish which could cause them to become sick or die. Slowly adding water from your tank into the bag will help the fish adjust slowly to these changes.

- ◆ When you open your bag of fish, be sure to stay away from any type of flame since the oxygen added to the bag could start a fire.
- ◆ Every 5 minutes, pour 2 cups of water from your tank into the bag of water with your goldfish until you have put 8 cups into the bag. Remove extra water as needed to keep your bag from overflowing.
- ◆ CAREFULLY net your fish out of the bag and place them into the aquarium. If possible, avoid pouring the water from the bag into your aquarium since you will also be pouring any wastes your fish have excreted into your aquarium.



### Your Tank Needs Care, Too!

Once you've put your fish into your aquarium, remember to take care of your tank as well as your fish. Here are a few reminders:

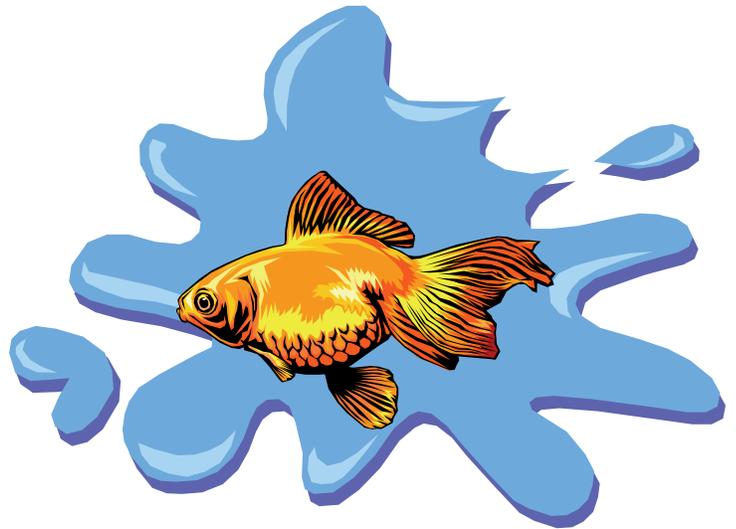
- ◆ Keep water within a 1/2" of the top of the tank. Add extra water when needed. Always use dechlorinator whenever adding new water.
- ◆ If you have live plants in your aquarium, leave the light on 12 hours a day to promote good plant growth.
- ◆ Regularly use the siphon to remove any build up of waste in the gravel. Replace the water lost from siphoning. (Don't forget the dechlorinator!)
- ◆ Take out about 10 – 20% of the water in your tank each week and replace it with fresh water. Make sure to add the dechlorinator to the fresh water before putting it in the tank.

## SPLISH SPLASH

### Water, Water Everywhere!

One of the most important parts of caring for your goldfish is caring for the water. Since your fish are completely surrounded by water, it is important that you give them the best water quality possible. The better job you do in providing good water quality, the better success you will have in raising your goldfish. If the water quality becomes poor, your fish is much more likely to get sick. Remember, just because your water looks clean doesn't mean it is! We can't see the oxygen that we breathe, but we can't live without it! Testing your water is very important in keeping a good aquarium. Here are a few things about water quality that you should know:

- ◆ **Oxygen:** Fish need oxygen just like we do! Instead of breathing with lungs, they get oxygen from the water through their gills. In a pond, microscopic green plants called phytoplankton or algae produce oxygen when it's sunny, just like trees and other green plants. This process is called photosynthesis. In an aquarium, however, you usually don't have much phytoplankton. Since the oxygen is not produced naturally, you must provide it for your fish with an air stone and air pump. With your air pump running, you should have plenty of oxygen for your fish.
- ◆ **Temperature:** Fish are cold blooded which means their body temperatures are regulated by the temperature of their surroundings. In cooler water, goldfish are less active and will not eat as much as in warmer (not hot!) water. Water that is either too cold or too hot can stress fish. The ideal water temperature for goldfish is between 62° and 74°F. It is important that you place your aquarium away from direct sunlight (where it may get too hot) or drafts (where it may get too cool).
- ◆ **pH:** pH is the amount of acids or bases in water. The pH scale ranges from 1 to 14. Water with a pH less than 7 is said to be acidic whereas water with a pH more than 7 is said to be basic. A pH equal to 7 is neutral. For a goldfish, a pH of 6.5 to 8 is ideal. Anything outside of this range is stressful to your fish. It is recommended that you test the pH of the water in your aquarium every week.



*Continued on next page*

**Don't stress your fish with poor water quality!**

*Continued from previous page:*

◆ **Ammonia, Nitrite, and Nitrate:** These come from feed, fish waste, or rotting animals or plants. Even though you can't see these compounds, they can be very dangerous to your fish if there is too much in your tank. This is especially true of ammonia and nitrite. It is normal to have some amount of these compounds in your tank since they come from the feed you use. You can see why it is important not to overfeed your fish! When feed is put in your aquarium, several things can happen. (1) The feed can be eaten by the fish which use the protein and other nutrients for growth and health. The fish then excretes, or gives off, their waste product—ammonia—from their gills. The filter and live plants in the aquarium will help filter out these wastes. (2) Extra, uneaten feed begins to decay and releases ammonia directly into the water. Some of the ammonia is changed to nitrite and nitrate by

“good” bacteria in the water. The filter and plants can then take up the nitrite and nitrate. When too much food is given, these wastes can build up faster than the plants and filter can remove them. During your first year of Gold Rush, you should check the ammonia in your aquarium water once a week. The total ammonia should be less than 0.5 ppm (parts per million). You will begin testing nitrite and nitrate if you continue into a second year of Gold Rush. Nitrite should be less than 0.1 ppm. Nitrate should be 100 ppm or less. It is best if ammonia and nitrite are as close to zero as possible. If any of these levels are high, then a 25% water exchange is recommended. Be sure to use the dechlorinator when using city water. (Ask your parents if you're not sure what type of water you have.) Make sure your filter is clean and that you are not overfeeding.

#### ***Tips for Good Water Quality:***

- ◆ *Fill your aquarium with good quality water. Well water or city water can be used.*
- ◆ *If you use city water, it will have chlorine in it to kill bacteria. **Chlorine is very toxic to fish!** Use the dechlorinator any time you add new water to your tank.*
- ◆ *Use the thermometer to make sure your temperature stays in the ideal range.*
- ◆ *Be sure your air pump and filter are working properly. The bag in your filter should be rinsed with dechlorinated water at least twice per month, or more often as it begins to clog with waste. Change the bag every two months.*
- ◆ *Exchange at least 10% of the water in your tank per week. Use the siphon tube to clean any waste in the gravel at the same time you change the water. To be safe, unplug the filter, light, and air pump before exchanging water.*
- ◆ *Check the pH and ammonia in your tank once a week. Second year Gold Rushers should also check nitrite and nitrate once a week. If any of the compounds are above the ideal levels, exchange 25% of the water.*
- ◆ *Follow feeding guidelines carefully. Do not overfeed!*
- ◆ *Do not leave the light on more than 12 hours a day. Too much light can cause a lot of algae to grow on the glass of your aquarium.*
- ◆ *Do not put unwashed hands into the aquarium. Use a dip net if you need to take something out of the aquarium. Also, be careful with the use of sunscreen, perfume, bug spray, or other chemicals on you or around your aquarium as these substances can be harmful to your fish.*
- ◆ *Keep records of all of your water quality results and water exchanges.*



## LET'S EAT!

### The Basics

Fish are like other animals, including us—they have special food requirements to grow and be healthy. In natural aquatic environments such as lakes, rivers, and oceans, fish feed on other aquatic organisms including smaller fish, plankton, and plants. Fish raised in aquariums are completely dependent on what we feed them. A balanced diet must include protein, fat, carbohydrates, vitamins, and minerals.

- ◆ Protein is necessary for growth and for repair of cells and body tissue. Proteins must be supplied regularly to ensure good growth and health. Natural foods such as plankton, worms, and certain plants are a good source of protein as well as other important nutrients. In flake or pellet goldfish feeds, protein may come from fish, soybeans, shrimp, or algae. Most goldfish feeds have a protein level of 30 – 42%.
- ◆ Fats and oils are important to fish since they provide energy. They are available from many sources, and extra fats can be stored in the body. Too much fat is not good and can affect the function of the liver to filter and cleanse the blood. Fat content in goldfish feeds range from 3 – 10%.



### What's For Dinner?

It is best to provide a variety of feed for your goldfish (but no table scraps!). Alternate feeding with a crumble (granule or small pellet) feed and a flake feed made specifically for goldfish. The feeds will have all the necessary protein, vitamins, minerals, carbohydrates, and fats for balanced meal. Using these diets together will provide complete nutrition for your fish and help them grow well. In addition, if you have live plants in your aquarium, don't be surprised to see your goldfish feeding on them. Just make sure plant pieces do not clog your filter or affect your water quality.



- ◆ Like fats, carbohydrates provide energy for body functions. Natural sources of carbohydrates include plankton and aquatic plants. Soybeans, rice, wheat, and oats are all used in goldfish flakes or pellets.
- ◆ Minerals such as calcium, magnesium, phosphorus, copper, iodine, and iron are necessary for proper body function. Many of the foods we eat—like cereals and breads—have added minerals. They are usually needed in small quantities since animal sources of proteins also contain minerals and vitamins.
- ◆ To avoid certain diseases, fish also need vitamins such as A, B, C, D, E, K, riboflavin, niacin, and folic acid. All goldfish feeds have vitamins added to ensure good nutrition.

## Breakfast and Supper

Since fish are cold-blooded and their need for feed is determined by the water temperature, goldfish will eat less in cooler water than in warmer water. Your fish should feed actively when your water temperature is between 68° and 74°F. Most young fish grow faster when they are fed more than once per day. A good rule of thumb is to feed them in the morning when you have breakfast or at night when you have supper. If you go away for several days, you can ask a friend to feed them (be sure to tell them how and how much!) or you can choose not to feed them until you return. Goldfish can actually go for 7 – 10 days without being fed, but feeding every day is best.



### Just Enough!

Giving the right amount of food is VERY important. You want to feed them enough to keep them healthy and growing well but overfeeding can cause water quality problems. A good rule of thumb is to feed your fish whatever they can eat in 1 to 3 minutes, once a day (breakfast or supper!). Take a pinch of the feed and sprinkle a small amount in the water. Once your fish come up and start eating, begin timing. If the fish eat all you have given them before 3 minutes, add a little more. Continue this until the 1 to 3 minutes is up. As the fish grow, you will notice that the amount of feed that your fish will eat in this time will increase. If you have problems with high ammonia, nitrite, or nitrate, you may need to decrease the amount of feed you are giving your goldfish in order to improve water quality. Your goldfish will grow better with a little less feed and good water quality than with lots of feed and poor water quality.

ANSWER from Page 3:  
Goldfish don't have a true stomach!