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|  | **History of Goldfish**  Goldfish are ancient creatures that have existed nearly a thousand years. The first record of them was during the Sung Dynasty (960-1279 AD) in China where they had been bred from mutations of the wild Crucian carp and lived in ponds as household pets (Teitler 6). Goldfish breeding became quite popular in the following years and businesses were soon established for selling the fish. China exclusively had the goldfish until 1500, when the Japanese began breeding them as well. New varieties were bred and imported throughout the east. However, the fish did not reach Europe until about 1700. America eventually saw goldfish in the late 1800s and the hobby of breeding them caught on (7). Over the centuries, many strange breeds have been formed. Goldfish continue to grow in popularity as the years go by.  **Taxonomy**  Kingdom: Animalia  Phylum: Chordata  Subphylum: Vertebrata  Class: Osteichthyes  Order: Ostariophysi  Family: Cyprinidae  Genus: Carassius  Species: auratus  All goldfish belong to the species *Carassius auratus.* The Crucian carp, *Carassius carassius*, is the other member of its genus and is distinguishable by the differences in body shape and dorsal fin. Goldfish have between 28 and 31 scales along the lateral line and five sets of fins. They also have a swim bladder which allows them to rise or sink in the water whenever they wish. They have all five basic senses; sight is the weakest and touch is the strongest (Vierke 245). The lateral line of goldfish sense pressure and temperature. The Goldfish Society of Great Britain developed a nomenclature to describe the scales of goldfish: metallic (highly reflective), matt (translucent or flat coloration), nacreous (both reflective and matt), and calico (three or more colors of scales).  **Varieties**  The many varieties of goldfish are classified according to color, finnage, body shape, head, and any other mutations. Fish coloring varies due to the presence of pigment cells called chromatophores, which react to temperature, composition of the water, and other environmental factors. In goldfish, there are two types: melanophores and xanthophores. A fish's coloration is determined by the size and number of chromatophores present (Paradise 12). The most common color is orange; however, black, brown, green, yellow, red, blue, and even albino colorations are possible. Finnage describes where the five sets of fins are found on the fish. Placement and structures of the tail fin, anal fin, dorsal fin, and pelvic and pectoral fins differ among the varieties of goldfish. In prize fish, the size and stature of their fins show signs of good breeding. Body shapes are drastically different among the variations of goldfish. A good specimen for certain variety must be symmetrical and not distorted in any way. The heads of goldfish range from pointed to blunt. Breeders in the east place great emphasis on head shape.  The most common type of goldfish are Wakins. They strongly resemble their ancient ancestors and are very hardy. When allowed to grow outdoors in a pond, Wakins can reach two feet in length. Their bodies are streamlined with either a forked tail or one split into three lobes (Teitler 35).  Comets are long-finned common goldfish and originated in the United States. Their tails are usually longer than their bodies. Comets are active breeders and are able to withstand harsh environments. They can grow to twenty inches and are quite fast (35).  Shubunkins have great variations in color, including calico, matt, and nacreous. Their fins are larger than those of Wakins and can resemble comets. They were first produced in Japan in 1900 (36).  The ranchu, or lionhead, goldfish are short, rounded, and have no dorsal fin. The head develops a mass of nodules, giving the appearance of a lion's mane. These fish are poor swimmers because of their small bodies and usually swim with their heads angled downward (37).  One of the most interesting breeds of goldfish is the telescope, or globe-eye, goldfish. These goldfish have eyes that protrude upward at two months of age. However, they are quite delicate and difficult to raise and breed. They have short bodies and symmetric fin pairing (37).  Many other varieties of goldfish exist. Breeders often cross one type with another to gain characteristics of both to produce offspring. Wakins require the least care and are the most basic of the breeds. Nevertheless, some exotic types are temperamental and require special care and extra attention.  **Aquarium Conditions**  The ASPCA Pet Care Guide for Kids: Fish states in its foreword  Fish don't blink and they don't smile. In fact, a fish's face doesn't show any  expression at all. That does not mean, however, that fish don't feel. We don't  know what they feel, but they certainly can feel hunger, heat and cold, and  perhaps they feel fear. We have to keep our pet fish the way that suits their  natural need: They need clean water and the right food. It is important for us  to care for our pets properly. If we can't we should not have fish as pets at all (Evans 1).  Goldfish will thrive when put in the proper environment and will perish when not cared for. A spacious aquarium is the most important element for a goldfish's vitality. Rectangular tanks with a high surface area work best. The rule of thumb is "allow one inch of fish (not including the tail) per gallon of water... no less than 30 square inches of surface area is required for each inch of fish" (Vierke 245). Surface area is length multiplied by height of the tank. The tank should be out of direct sunlight and have a water temperature between 13 and 21 degrees Celsius and a pH of 7.2 (246). Goldfish breeders agree that the water should be treated with a chlorine remover before the fish are put in it, since chlorine can kill goldfish. In an aquarium with a filter, water should be changed every couple weeks to avoid disease. If the aquarium does not have a filter, the water should be changed more frequently. Gravel placed at the bottom of the aquarium helps beneficial bacteria grow and draws away waste from the water.  Goldfish are more active when fed a variety of foods a few times a day. Dried foods like TetraFin are the most inexpensive. They provide all the nutrients a goldfish needs. Shrimp pellets and paste mixtures of liver, spinach, and egg also are easy ways to feed the fish. Some people choose to feed live organisms to their fish instead of other food. Water fleas, brine shrimp, tubifex, microworms, and Drosophila are all edible (Teitler 60).  Goldfish given a nurturing environment will live happy lives. The only items needed for a healthy goldfish are clean water, a large tank, and daily feedings. |

*This Web Site is Best viewed with 256 or more colors.*

*For More Information about Creekwatch, please contact Eric Thiel at* [*ethiel@pleasanton.k12.ca.us*](mailto:ethiel@pleasanton.k12.ca.us)