number	Common Name	*Genus*	*species*	are there modern descendents	formation	Age	Location	preservation
You may obtain a fresh copy of this data sheet from the education section on www.hgms.org								
Excellent Web reference to invertebrate paleontology								
	http://www.geo.utexas.edu/courses/422K/Outlines.htm#OUTLINE_1							
KINGDOM PROTISTA								
1	Fusulinid			no	several	middle Pennsylvanian	Lake Brownwood, Tx	original shell material
1	Fusulinids are single celled animals that live on the bottom of the ocean. Glue one to a board and grind it in half with a piece of sandpaper. You will see a highly complex structure that is the walls the animal lives in. Extinct.							
1	http://www.kgs.ku.edu/Publications/ancient/f06_fusulin.html							
KINGDOM PLANTAE								
2	algae fruiting body	*Porocystis*	*globularis*	no	Glen Rose	Cretaceous	Hill Country of Texas	external cast
2	This is a strange fossil. What you see is just the internal cast of the body that has been filled with lime mud. There is very little structure except for the dimple at the end.							
2	http://www.cretaceousfossils.com/plants/porocystis_globularis.htm							
KINGDOM PLANTAE, Polypodiophyta								
3	fern	*Percopteris*		yes	Francis Shale Creek Member of the Carbondale Formation	middle Pennsylvanian	Mazon Creek, Illinois	Carbon film
3	Ferns have not changed very much in the last 250 million years. These fern leaves were washed into the ocean where they settled on the bottom. The decay of the organic material created a reducing environment that caused the precipitation of siderite (iron carbonate) that protected the remains. The fern itself has become a thin carbon film.							
3	http://www.museum.state.il.us/exhibits/mazon_creek/about_mazon_creek.html							
KINGDOM PLANTAE, Gymnosperm								
4	conifer			yes			Lowertz, Ok	carbonized wood
4	Evergreens like pine trees are a common variety of conifers. Conifers are primitive trees which have very small cells. Look at this material with a microscope or loop and see the cell size. This material is nearly charcoal, wood that has been heated until just carbon remains.							
46	conifer			yes	Catahoola	Oligocene	Jasper, Tx	silicified
46	This conifer is probably a juniper. It has the common small cell size. It has been preserved because the cells have been filled with silica in a process called petrification.							
46	http://www.botany.utoronto.ca/courses/BOT251/TFeild/Bot251_lec30-2.pdf							
KINGDOM PLANTAE, Angiosperm								

5	palm			yes	Yegua	Eocene - Oligocene	Bryan, Tx to Jasper, Tx	silicified
5	Palm trees are very different from hardwoods and conifers. They grow only at the top and do not show any growth rings. This rock is a piece of palm that has been cut across the grain. The dots are the vascular system that pass water up and down the trunk.							
5	http://waynesword.palomar.edu/trjune99.htm							
6	hardwood			yes	Catahoola	Oligocene	Jasper, Tx	silicified
6	Hardwoods have a much greater variety of cells than conifers. Look at the cells with a microscope. Trees like oaks are hardwoods. Hardwood trees have cells of many sizes for different functions.							
55	hardwood			yes	Yegua	Eocene	Bryan, Tx	silicified
55	Hardwoods have a much greater variety of cells than conifers. Look at the cells with a microscope. Trees like oaks are hardwoods. Hardwood trees have cells of many sizes for different functions.							
7	hardwood			yes	Catahoola	Oligocene	Huntsville, Tx, Blue Lagoon	carbon film
7	Hardwoods have a much greater variety of cells than conifers. Look at the cells with a microscope. Trees like oaks are hardwoods. Hardwood trees have cells of many sizes for different functions.							
7	http://waynesword.palomar.edu/trjune99.htm							
KINGDOM ANAMALIA, PHYLUM PORIFERA:								
43	sponge	Wewokella		y		Pennsylvanian	Mineral Wells, Tx	permineralized with calcite
43	This sponge has calcite rods in its tissues to provide structural support. In life, the sponge has a hollow center which has collapsed during the burial process. You can see spicules on the surface.							
48	sponge	Maeandrostia				Pennsylvanian	Lake Bridgeport, Tx	permineralized with calcite
48	A simple stick like sponge. You can see the external water intake pores on the outside of this sponge as little spikes.							
49	sponge	Girtyocoelia				Pennsylvanian	Lake Bridgeport, Tx	permineralized with calcite
49	Each of the "peas" is a feeding chamber where cells comb food out of the water sucked into the sponge.							
50	sponge	Girtycoelia				Pennsylvanian	Lake Bridgeport, Tx	permineralized with calcite
50	Compare this to #49. The tissue surrounding the "peas" has been preserved. Each bulge is a chamber lined with feeding cells.							
51	sponge	Coelocladia				Pennsylvanian	Lake Bridgeport, Tx	permineralized with calcite
51	The water intake pores on this sponge are very visible as spiky points.							
52	sponge	Fissispongia				Pennsylvanian	Lake Bridgeport, Tx	permineralized with calcite
52	A simple stick like sponge. You can see the external water intake pores on the outside of this sponge as little spikes.							
52	http://www.kgs.ku.edu/Extension/fossils/sponge.html							
52	http://www.oceanicresearch.org/sponges.html							
KINGDOM ANAMALIA, PHYLUM CNIDARIA: anthrozoa:								
15	Conularid	*Conularia*		n	Finis shale	Pennsylvanian	Jacksboro spillway, Tx	original shell material
15	A complete specimen of these Conularid has a 4 piece hinged cap on the big end. There are no living relatives. We do not know what these animals really are. The shell is calcium phosphate which weathers to a bluish color.							

16	horn coral	Lophophyllidium	*spinosum*	y	Gunsight Limestone Member of the Graham Fm.	Pennsylvanian	Pk Rd 15 near Lake Brownwood, Tx	original shell material
16	Ancient corals were primarily solitary animals that built rather small skeletons rather than the colonial ones we see in modern ocean. The coral has a horn shape because it grows bigger through time. Note the exterior has spiney processes to help keep the animal upright.							
16	http://pls.atu.edu/physci/geology/people/baker/geol3124/introcnidaria_htm.htm							
17	palmate coral	*Acropora*	*palmata*	y		Pleistocene	Stiren Beach, Maryland	original shell material
17	This is a colonial coral. Each pore you see is a separate animal. Today these live behind the reef in quiet water.							
17	http://www.uvi.edu/coral.reefer/							
18	petoskey stone	*Hexagonaria*	*pericarnata*	y	Gravel Point, Traverse Group	Devonian	Little Traverse Bay, Mi	original shell material
18	This is devonian colonial coral. It never gets bigger than your hand. Look at the top and you will see that each animal has radial septa. These septa are present in every coral.							
18	http://www.boynecountry.com/faq/faqmain.html							
45	horn coral	*Caninia*	*torquia*	y	Gunsight Limestone Member of the Graham Fm.	Pennsylvanian	Pk Rd 15 near Lake Brownwood, Tx	replaced by calcite
45	This coral is usually found in broken pieces, probably due to wave action. The external surface is worn off by being tumbled.							
45	http://www.kgs.ku.edu/Extension/fossils/coral.html							
KINGDOM ANAMALIA, PHYLUM Brachiopoda								
12	brachiopod			y	Gunsight Limestone Member of the Graham Fm.	Pennsylvanian	Pk Rd 15 near Lake Brownwood, Tx	original shell material
12	Look at the small end or beak of the shell and you will see a hole. The brachiopod stands upright on this muscle. It can wiggle back and forth to knock off sediment.							
12	http://www.palaeos.com/Invertebrates/Brachiopods/brachiopoda.htm							
47	brachiopod	*Chonetes*		y		Pennsylvanian	Mineral Wells, Tx	original shell material
	There are lots of shapes of brachiopods. They all have two shells that are symmetrical perpendicular to the hinge line.							
	http://www.fallsoftheohio.org/education/Brachiopods.html							
KINGDOM ANAMALIA, PHYLUM Bryozoa								
8	archimedes spiral	*Archimedes*		n		Mississippian	Orange Co, Ind	original shell material
8	This spiral is just the central support for the actual animals. They bryozoa animal is colonial and lives on a fan on the out side of the spiral.							
8	http://tolweb.org/tree?group=Bryozoa&contgroup=Bilateria							

9	massive bryozoa			n	Beech River Fm.	Silurian	Decatur Co, Ind	original shell material
10	massive bryozoa			n	Richmond Group	Ordovician	Richmond, Ind	original shell material
42	massive bryozoa	*Heterotrypa*	*subfrondosa*	n	Latonia Fm	Ordovician	Carroll Co, Ky	original shell material
44	massive bryozoa					Pennsylvanian	Mineral Wells, Tx	original shell material
44	Lots of bryozoa are lacy but some made colonies that grew as large 10 inches across. Each animal shows up as a tiny dot.							
44	http://www.uky.edu/KGS/coal/webfossl/pages/bryos.htm							
KINGDOM ANAMALIA, PHYLUM Echinodermata; Class Crinoidea								
11	crinoid stems			y	Santa Anna Branch /Sedwick /Moran Formations, Wolfcampian age	Permian	Wilson clay pit, near Lake Brownwood, Tx	original shell material
11	This is the stem that connects the anchor called a holdfast and the main body called a calyx. Crinoids are made of lots of little calcite plates. After death, the whole thing comes undone making crinoids a difficult fossil to find. One of the most recognizable part is the stem. Small							
	http://freespace.virgin.net/craven.pendle/fossils/crinoids/a_crinoid.htm							
KINGDOM ANAMALIA, PHYLUM Echinodermata; Class Blastoidea								
13	blastoid	*Pentremites*		n	Galconda ls	Mississippian	Hart Co., Ky	original shell material
14	blastoid	*Pentremites*		n	Indian Spring shale	Mississippian	Crawford Co, Ind	original shell material
14	Like a sea urchin, blastoids have 5 ambulacral rays. They use tube feet to collect organic particles from the water. At the top, there are 5 holes - 4 bring in water, the largest one is the anus.							
14	http://www.priweb.org/collections/echin/blast/pentna.html							
KINGDOM ANAMALIA, PHYLUM Echinodermata; Class Echinoidea								
21	sea urchins	*heart urchins*		y	many	Cretaceous hill country	Texas	original shell material
21	There are two main types - symmetrical and heart urchins. Heart urchins have very short spines and are burrowers in the sediment. Symmetrical urchins have long spines and live at the surface. The animals are made of calcite plates. They have tube feet powered by a hydraulic pump. Their mouth is on the bottom and their anus is on the trailing edge as they move through the sediments.							
21	http://www.nhm.ac.uk/research-curation/projects/echinoid-directory/INTRO/LIFESTY3.jsp							
KINGDOM ANAMALIA, PHYLUM Mollusca; CLASS Cephalopoda; Order Ammonitida								

20	ammonite			No immediate descendent, but the modern pearly nautilus is very similar.	usually Glen Rose fm,	Cretaceous	Texas hill country	internal mold
20	The shell material has dissolved leaving an internal mold. Typically the shell is broken and you only find a section. Look for the highly convoluted septa that separate the chambers in the shell.							
20	http://www.discoveringfossils.co.uk/Ammonites.htm							
KINGDOM ANAMALIA, PHYLUM Mollusca; CLASS Cephalopoda; Order Belemnitida								
56	baculities	*Baculities*		n	Pierre Shale	Cretaceous	South Dakota	original shell material
56	Baculites is a fossil squid with a straight shell. It is rare for the aragonite shell material (pearly appearance) to be preserved.							
56	http://www.kgs.ku.edu/Publications/ancient/f16_ceph.html							
19	Orthoceras	*Orthoceras*		n	Formation ?, Tindouf Basin	Devonian	Morocco	mold
	Orthoceras is a particular genera of straight shelled squid. These specimens have been ground to expose the chambered cephalopod. You can frequently see the internal tube called the siphuncle. The shell material has recrystallized to calcite.							
	http://www.trilobia.com/Morocco5.htm				A quarry!			
	http://www.trilogames.com/nautiloids.html							
KINGDOM ANAMALIA, PHYLUM Mollusca; CLASS Gastropoda								
27	snails	*several*		yes	Crocket Fm, Stone City member	Eocene	Hwy 21 bridge over the Brazos River, Texas	original shell material
28	snails	*several*		yes		Pennsylvanian	Lake Brownwood, Tx	recrystallized calcite
29	snails	*several*		yes		Cretaceous	Texas hill country	internal mold
30	snails	*Transennella*		yes		Pleistocene	West Palm Beach, I	original shell material
30	These are marine snails. They have an aragonite shell which means that the shell is easily dissolved or recrystallized. The aragonite shell has dissolved leaving only the mud that filled the shell to show the internal morphology. Mixed gastropod species - look at the Stone City identification charts.							
30	http://www.solaster-mb.org/mb/gastropoda.htm							
KINGDOM ANAMALIA, PHYLUM Mollusca; CLASS Bivalvia								
22	Devils Toenails	*Ilmatogyria*	*arietina*	n	usually the Georgetown limestone	Cretaceous	many locations in Texas	original shell material
22	Oysters have considerably variation in shell shape. Since an oyster must attach to a hard substrate, their shape is considerably influenced by							
	http://www.mdsg.umd.edu/oysters/oysback.htm							

23	Denture clam	*Rastellum*	*carinatum*	similar to modern Zig-Zag oyster		Cretaceous	Arkansas	original shell material
23	This is an oyster and not a clam. Clams have a regular shape. These oysters have a highly seriated edge which looks like a set a dentures.							
	http://www.cretaceousfossils.com/invertebrates/pelecypods/rastellum_carinatum.htm							
24	clam	*Corithium*	*muscarum*	y		Pleistocene	West Perkin Beach, FL	original shell material
24	Clams have a regular shape where the shells are mirror images of each other. Clams are very abundant fossils.							
24	http://www.chesapeakebay.net/info/hard_clam.cfm							
25	oyster	*Texigryphea*		y		Cretaceous	many locations in Texas	original shell material
26	oyster	*Nicaisolopha*	*bellaplicata*	y	Duck Creek	Cretaceous	Post Oak Creek, Sherman, TX	
	Oysters have considerably variation in shell shape. Since an oyster must attach to a hard substrate, their shape is considerably influenced by							
KINGDOM ANAMALIA, PHYLUM Arthropoda; Subphylum Trilobitomorpha; Class Trilobita								
31	trilobite	*Phacops*		n		Devonian	Morocco	recrystalized shell material
32	trilobite	*Erathia*	*kingi*	n	Wheeler Shale	Cambrian	Delta, Ut	recrystalized shell material
54	trilobite	*various*		n	Haragan	Devonian	Ada, Ok	recrystalized shell material
	Trilobites are arthropods like crabs, spiders, or bugs. The trilobites molt and shed their exoskeleton which means that lots of head and tails are left lying around. It is difficult to find complete specimens. They have compound eyes like a dragonfly.							
	http://www.fossilmuseum.net/Tree_of_Life/Phylum%20Arthropoda/ClassTrilobita.htm							
	http://www.trilobites.info/							
KINGDOM ANAMALIA, PHYLUM Chordate; subphylum Vertebrata; Class Chondrichthyes								
33	shark teeth	*many*		y		Miocene	Morocco	original shell material
34	shark teeth	*many*		y		Miocene	Morocco	original shell material
34	Sharks shed each tooth about every 3 weeks. It is difficult to identify the shark that each tooth came from because there are not many shapes of shark teeth.							
34	http://www.nmnh.si.edu/paleo/sharkteeth/							
KINGDOM ANAMALIA, PHYLUM Chordate; subphylum Vertebrata; Class Osteichthyes								
35	fish	*Diplomystus*		y	Green River Formation, WY	Eocene	Kemmer, Wy	original scales and carbonized film
36	fish			y	Taylor	Cretaceous	North Sulfur River, Texas	mineralized original bone

36	To preserve a fossil fish, they must die and be covered immediately to keep other predators away from them. The water dried up, fish died, and then rapidly covered so predators would not scatter the bones. Marrow cavities have been filled with calcite or quartz. Phosphate bone is still present.							
36	http://www.memoryoftime.com/engscience.html							
KINGDOM ANAMALIA, PHYLUM Chordate; subphylum Vertebrata; Class Reptilia								
37	Mosasaur bones			n	Taylor	Cretaceous	North Sulfur River, Texas	mineralized original bone
	Mosasaurs are air breathing marine reptiles. Their bones are common near Dallas. You can frequently see the marrow cavity in each bone (just like yours!). Marrow cavities have been filled with calcite or quartz. Phosphate bone is still present.							
	http://www.oceansofkansas.com/mosa-sty.html							
38	Turtle			y		Pleistocene	Peace River, Florida	original material
	Turtles have remained almost unchanged for 200 million years. Notice the marrow cavity in the center of each piece.							
	http://faculty.uca.edu/~benw/biol4402/lecture10/sld001.htm							
39	Dino Egg shell			n		Lower Cretace	Jiangxi Province, China	
	Dinosaur egg shells are very different from modern birds. The surface are highly textured and frequently have bumps or ribs.							
	http://www.nationalgeographic.com/features/96/dinoeggs/							
41	Mosasaur teeth			n	Taylor	Cretaceous	North Sulfur River, Texas	original material
	Mosasaurs replace their teeth as they are damaged. Thus teeth are much more common than bones.							
	http://www.oceansofkansas.com/about-mo.html							
KINGDOM ANAMALIA, PHYLUM Chordate; subphylum Vertebrata; Class Mammalia								
40	mammal bones	*mixed*		y		Pleistocene	Peace River, Florida	original material
	Many Pleistocene bones are not mineralized and thus feel very light in weight.							
	http://www.earthlife.net/mammals/bones.html							
KINGDOM ANAMALIA, PHYLUM Hemichordate, class Graptolithina								
53	graptolites			n		Ordovician	Strasburg, Va	carbon film
	Graptolites are colonial animals that floated at the surface of the ocean. They thus had a world wide distribution and are useful for correlating rocks across continents.							
	http://www.premdesign.com/grapto.html							