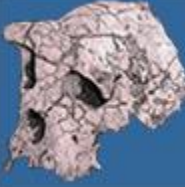







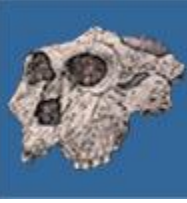






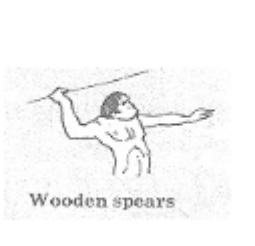
Name _____

CHART OF HUMAN EVOLUTION

	Old Stone Age	<p><i>Sahelanthropus tchadensis</i></p> <p>CHIEF SPECIMENS: found in western Chad, 2001</p> <p>WHEN LIVED (est., in years ago): 7.6—6 million</p> <p>BRAIN SIZE (est., in cu cm): 360-370 (slightly smaller than a male chimp's)</p> <p>SPECIAL FEATURES: oldest known hominid; set apart from other fossil apes by smaller canines, thicker and larger cheek teeth, and more downwardly oriented foramen magnum (hole where spinal cord exits brain), suggesting upright posture and locomotion</p> <p>ORIGIN OF NAME: skull nicknamed Toumai, "Hope of Life" in local Goran language</p>
	Old Stone Age	<p><i>Orrorin tugenensis</i></p> <p>CHIEF SPECIMENS: found in northern Kenya, 2000</p> <p>WHEN LIVED (est., in years ago): 6.1—5.8 million</p> <p>BRAIN SIZE (est., in cu cm): unknown (no skulls or even skull fragments found so far)</p> <p>SPECIAL FEATURES: size and shape of femur suggests it may have been bipedal</p> <p>ORIGIN OF NAME: species name from Kenya's Tugen Hills, where found</p>
	Old Stone Age	<p><i>Australopithecus anamensis</i></p> <p>CHIEF SPECIMENS: also found in Kenya</p> <p>WHEN LIVED (est., in years ago): 4.1—3.9 million</p> <p>SPECIAL FEATURES: the lower leg bone, including surface for a knee joint, indicates species was bipedal</p> <p>ORIGIN OF NAME: <i>Australopithecus</i> means "southern ape"; <i>anamensis</i> from word <i>anam</i> ("lake")</p>

	<p>Old Stone Age Tools/ Accomplishments</p>	<p><i>Australopithecus afarensis</i></p> <p>CHIEF SPECIMENS: adult lower jaw from Laetoli, Tanzania, is type specimen; many other fossils known, including Lucy, a ~40%-complete skeleton found in Ethiopia's Afar region in 1974</p>
	 <p>digging tool</p>	<p>WHEN LIVED (est., in years ago): 4—3 million</p> <p>BRAIN SIZE (est., in cu cm): 446 (avg. of five skulls)</p> <p>SPECIAL FEATURES: Lucy's shoulder joint is a mixture of ape and human features that suggests it also still spent time in the trees</p> <p>ORIGIN OF NAME: <i>afarensis</i> honors Ethiopia's Afar region; Lucy nicknamed after Beatles' "Lucy in the Sky With Diamonds," playing in camp when fossil discovered</p>
	<p>Old Stone Age</p>	<p><i>Australopithecus africanus</i></p> <p>CHIEF SPECIMENS: found in quarry in South Africa, 1924;</p> <p>WHEN LIVED (est., in years ago): 3—2 million</p> <p>BRAIN SIZE (est., in cu cm): 400-560 (mean = 460)</p> <p>SPECIAL FEATURES: bipedal, but probably also good at climbing trees; thicker teeth than <i>A. afarensis</i></p> <p>ORIGIN OF NAME: binomial name means "southern ape of Africa"</p>
	<p>Old Stone Age</p>	<p><i>Australopithecus garhi</i></p> <p>CHIEF SPECIMENS: found in 1990, and in 1997, both in central Ethiopia</p> <p>WHEN LIVED (est., in years ago): 2.5 million</p> <p>BRAIN SIZE (est., in cu cm): 450 (based on one cranium)</p> <p>SPECIAL FEATURES: limb proportions thought to be more human-like than those of <i>A. afarensis</i> (Lucy)</p> <p>ORIGIN OF NAME: <i>garhi</i> means "surprise" in local Afar language</p>

	<p>Old Stone Age</p>	<p><i>Paranthropus aethiopicus</i></p> <p>CHIEF SPECIMENS: found in 1967 and 1985, respectively, both in Ethiopia; other fossils known from Kenya</p> <p>WHEN LIVED (est., in years ago): 2.5—2.3 million</p> <p>BRAIN SIZE (est., in cu cm): 410 (based on one specimen, the "Black Skull")</p> <p>SPECIAL FEATURES: skull and teeth adapted for eating very mechanically demanding diet</p> <p>ORIGIN OF NAME: <i>Para</i> given by namer because he considered <i>Paranthropus</i> a side branch of the human lineage; species named <i>aethiopicus</i> because it was the first fossil hominid found in Ethiopia</p>
	<p>Old Stone Age</p>	<p><i>Paranthropus robustus</i></p> <p>CHIEF SPECIMENS: found in 1930s in South Africa.</p> <p>WHEN LIVED (est., in years ago): 2—1 million (deposits have not yielded absolute dates)</p> <p>BRAIN SIZE (est., in cu cm): 530</p> <p>SPECIAL FEATURES: generally considered a dead-end side branch of the human family that nevertheless flourished for perhaps 1 million years</p> <p>ORIGIN OF NAME: <i>robustus</i> refers to its robust teeth and skull, adapted for a tough vegetarian diet</p>
	<p>Old Stone Age</p>	<p><i>Paranthropus boisei</i></p> <p>CHIEF SPECIMENS: found by Mary Leakey in Olduvai Gorge, Tanzania, in 1959; fossils also known from Kenya, Ethiopia, and possibly Malawi</p> <p>WHEN LIVED (est., in years ago): 2.3—1.3 million</p> <p>SPECIAL FEATURES: similar to <i>P. robustus</i>, but with greater development of the big cheek teeth, large chewing muscles, and other masticatory features that set the genus apart from the gracile australopithecine and <i>Homo</i> lineages</p> <p>ORIGIN OF NAME: <i>boisei</i> honors Charles Boise, who helped cover the Leakeys' expenses during excavation at Olduvai</p>

	<p>Old Stone Age Tools/ accomplishments</p>	<p><i>Homo habilis</i></p> <p>CHIEF SPECIMENS found in Olduvai Gorge, Tanzania, in 1959; subsequent fossils found there and in Kenya and Ethiopia</p> <p>WHEN LIVED (est., in years ago): 1.8–1.4 million</p> <p>BRAIN SIZE (est., in cu cm): 510-687</p> <p>SPECIAL FEATURES: considered first definite stone toolmaker, and first species of the genus <i>Homo</i> ("human")</p> <p>ORIGIN OF NAME: <i>habilis</i> ("able, handy" in Latin) given to emphasize this species' mental capacity and tool-making skills</p>
	 <p>hand axe</p>	
	<p>Old Stone Age Tools/ Accomplishments</p>	<p><i>Homo erectus</i></p> <p>CHIEF SPECIMENS found in Java, Indonesia, in 1891 (Java Man); important fossils from other sites on Java and in China, Georgia, and Africa, including the remarkably complete Turkana Boy skeleton found in Kenya in 1984; perhaps also found in Western Europe</p> <p>WHEN LIVED (est., in years ago): 1.8 million—ca. 50,000</p> <p>BRAIN SIZE (est., in cu cm): 600-1,200</p> <p>SPECIAL FEATURES: large brain and oblong braincase, large browridges, small teeth, and relatively vertical face distinguish <i>H. erectus</i> from earlier species; also, well-adapted for endurance running</p> <p>ORIGIN OF NAME: <i>erectus</i> refers to this species' upright posture</p>
	 <p>First use of fire</p>  <p>Wooden spears</p>	



Old Stone Age

Homo floresiensis

CHIEF SPECIMENS: "Hobbit" skull discovered on island of Flores, Indonesia, in 2003

WHEN LIVED (est., in years ago): 95,000—12,000

BRAIN SIZE (est., in cu cm): 400

SPECIAL FEATURES: one-third the size of contemporaneous *H. erectus* and *H. sapiens*, and had smallest brain size ever found in a tool-using hominin; its status remains controversial—it has been claimed, for instance, to represent a pathologically diseased population

ORIGIN OF NAME: *floresiensis* honors Flores, the island where the species was found



Old Stone Age
Tools/
Accomplishments

Homo heidelbergensis

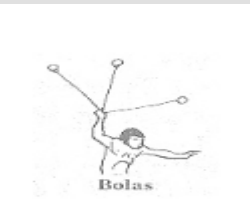
CHIEF SPECIMENS: found in 1907 in Germany; later fossils found elsewhere in Africa and Europe






WHEN LIVED (est., in years ago): 500,000—200,000

BRAIN SIZE (est., in cu cm): 1,274 (mean for 10 individuals)

SPECIAL FEATURES: big-brained, big-bodied, sophisticated hunter; probable ancestor of Neanderthals and modern humans

ORIGIN OF NAME: *heidelbergensis* honors Heidelberg, the German university town near where type specimen found



	<p>Old Stone Age Tools/ Accomplishments</p>	<p><i>Homo neanderthalensis</i></p> <p>CHIEF SPECIMENS: found in Germany's Neander Valley in 1856; other fossils found throughout Europe and in Asia as far east as Uzbekistan</p> <p>WHEN LIVED (est., in years ago): 200,000—30,000</p> <p>BRAIN SIZE (est., in cu cm): 1,420 (mean of 24 skulls)</p> <p>SPECIAL FEATURES: rugged physique adapted to survival in Ice Age Europe; made and used sophisticated tools, hunted, and buried dead; sparse evidence for personal ornaments or art; considered by most anthropologists to be a dead-end side branch of the human family; extinct in most of Europe by ~30,000 B.C.</p> <p>ORIGIN OF NAME: <i>neanderthalensis</i> honors Neander Valley, where type specimen found</p>
	 	
	<p>Old Stone Age Tools/ Accomplishments</p>	<p><i>Homo sapiens archaic</i></p> <p>CHIEF SPECIMENS: fossils found on all continents except Antarctica; oldest known <i>sapiens</i> fossils (195,000 years old) found in Ethiopia in 1960s</p> <p>WHEN LIVED (est., in years ago): 195,000—10,000 years ago</p> <p>BRAIN SIZE (est., in cu cm): today's mean = 1,350 (range 1,100-1,800)</p> <p>SPECIAL FEATURES: rounder cranial vault with vertical forehead; smaller, more retracted face; and a chin</p> <p>ORIGIN OF NAME: <i>sapiens</i> means "to know"</p>
	 <p>Bow and arrow</p> <p>(See more on next page.)</p>	

Homo sapiens continued



Antler needle



huts in caves



jewelry



harpoon



sewn clothing



carved figures

New Stone Age

Homo sapiens Modern



When Lived: 10,000 years ago

Tools/Accomplishments

