Good Source for Pictures
-http://www.uclan.ac.uk/facs/science/erg/photo_home.htm

Earthworm Facts

Species
-The name “earthworm” can pertain to many different species- there are approximately 2,700 different kinds of earthworms. Some that can be found here:
- -Nightcrawler
  - -most common garden worm, imported from Europe by accident in potted plants
  - -lives deeper in soil than most other worms
- -Compost ("manure") worm
  - -used in composting
- -Green worm
  - -can be green to yellow, pink, or gray
- -Snake ("crazy") worm
  - -Very fast moving
  - -lashes about when disturbed, often sheds "tail" which continues to lash about while the rest of the earthworm escapes.
  - -From China.

Anatomy/Physiology
-Coldblooded invertebrates
- -Can live in cold temperatures by hibernating or burrowing deeper into soil

-No eyes
- -But can sense light and feel vibrations in the ground.

-No lungs
- -Breathe through their skin
- -Covered in mucus to help do this
- -can live underwater
- -come to the surface when it rains to find food, not because they're drowning!

-Can eat up to 1/3 body weight in one day
-The bump in the middle of the worm is called the clitellum.
- -Secretes mucus to form the cocoons for the babies.

-Move by using the setae (bristles)
- -act as little arms helping them push forward

-If you cut an earthworm in half you don't get two earthworms.
- -Only the front end will survive and will regrow a tail end.

-Mucus also helps line the tunnels they make so the dirt doesn't collapse on them

-Earthworms vary in size.
- -Manure worms can be as small as 2 cm long.
- -Nightcrawlers can get to be almost a foot long.
- -The Australian Gippsland Earthworm grows to 12 feet long.
- -The largest earthworm ever found was in South Africa and measured 22 feet from its nose to the tip of its tail.

Eating
-What do earthworms eat? Not just dirt, but the remains of living things that are in the dirt!
- -Decomposers= eaters of dead material
  - -leaves and roots, and sometimes decomposing animals.
- -Also eat living organisms (bacteria, fungus, etc).

-How do earthworms eat? They don't have teeth but have very strong mouth muscles
    -They eat small pieces of food at a time.
    -They also "swallow" soil as they burrow and extract nutrients from it.
    -Nightcrawlers will pull pieces of food into their burrows to eat it later.

Earthworm Ecology (Why are they so great?)
-Increase pores in the soil (deeper and faster penetration of water and oxygen)= "open up soil"
-Tunnel deeply in the soil and bring deeper soil closer to the surface, mixing it with the topsoil.
-Slime, a secretion of earthworms, contains nitrogen, an important nutrient for plants.
-Earthworm poop= "casts". Make soil more fertile.
    -Contain concentrated nitrate, phosphorous, exchangeable magnesium, potassium and calcium
    -these = plant nutrients, regulate soil pH.
-Can be used for composting
    -break down food waste, yard waste, to create gardening soil
    -but not nightcrawlers, they need deeper soil
-Food for others. What eats them? Snakes, birds, moles, toads, foxes, beetles, centipedes, leeches, slugs and flatworms.

Earthworm Life
-In one acre of land, there can be more than a million earthworms.
-How long can they live?
    -Nightcrawlers can live for about 6 years
    -but some other species can live up to 10 years
    -(if they don't get eaten first! in the wild probably live two years at the most)
-Earthworms produce cocoons from which their young hatch
    -Hatching can take 3 wks to 5 mos depending on species
    -Can produce up to 80 cocoons per year
        -could translate to about 240 babies
        -depends on species– deeper burrowing worms produce much less because safer from predators

Some answers to potential experimental results:

Light vs dark:
Even though worms don't have eyes, they can sense light, especially at their anterior (front end). They move away from light and will become paralyzed if exposed to light for too long (approximately one hour).

Wet vs Dry:
If a worm's skin dries out, it will die (breathes through skin= requires moist skin). Also easier to move in wet environment.

Cold vs Warm:
Worms can freeze (cold-blooded)