Vestigial Structures
Introduction – Watch the video found at this link, https://goo.gl/xKlAX4 and answer the following questions.

1. According to the video, one out of thirteen people can do what just like chimps?

2. What does vestigial mean?

3. List four examples of vestigial structures.

4. What is lanugo, why is it considered a vestigial structure/behavior?

5. What was the purpose of having a third eyelid?

Evidence of Evolution -

Why do you have a tail bone?
If you look closely at a skeleton, you might notice a triangular bone at the end of the spinal column. This is your tailbone. Why would you have a tailbone when you don't have a tail? You have a tailbone because your ancient ancestors did have a tail. These sorts of "left-over" structures support the theory of evolution.

Structural Evidence
Even though two different species may not look similar, they may have similar internal structures that suggest they have a common ancestor. That means both evolved from the same ancestor organism a long time ago. Common ancestry can also be determined by looking at the structure of the organism as it first develops.
Vestigial Structures

Some of the most interesting kinds of evidence for evolution are body parts that have lost their use through evolution (Figure below). For example, most birds need their wings to fly. But the wings of an ostrich have lost their original use. Structures that have lost their use through evolution are called vestigial structures. They provide evidence for evolution because they suggest that an organism changed from using the structure to not using the structure, or using it for a different purpose.

Penguins do not use their wings, known as flippers, to fly in the air. However, they do use them to move in the water. The theory of evolution suggests that penguins evolved to use their wings for a different purpose. A whale’s pelvic bones, which were once attached to legs, are also vestigial structures. Whales are descended from land-dwelling ancestors that had legs.

On your Evidence for Evolution worksheet, write a 3 – 5 sentence summary explaining how vestigial structures are considered evidence for evolution.

Additional Examples of Vestigial Structure
6) The Ear

No, not the whole ear, but the human ear does have all kinds of strange things going on with it. For one thing, there’s an entire group of muscles attached to our ears that, for most monkeys, are used to move the ears like satellite dishes trying to pick up a signal. For us, however, they just sit there — not moving anything — suggesting that they’ve lost their biological function. Except, of course, for those of us who can wiggle our ears, in which case they serve the purpose of making you look like a fool (‘I’m just jealous’). It’s worth pointing out that chimps, like us, also have these underdeveloped muscles and therefore lack the capacity for ear-movement, as well.

Furthermore, in about 10% of the population, the outer rim of the ear called the helix has been known to show signs of vestigial features. In the ear pictured here, for example, a thickening of the helix called “Darwin’s tubercle” occurs at the juncture of the upper and middle thirds of the ear — a feature common to many mammals.

2) The Palmar Grasp Reflex

What’s interesting about the palmar grasp reflex is that it isn’t so much a vestigial feature as it is a vestigial behavior. According to a study conducted in 1962, when a finger or similar object is placed in the palm of an infant, as many as 37% of them are able to grasp with enough power to support their own body weight were they to be suspended. (Interestingly, the reverse motion can be induced by stroking the back or side of the baby’s hand). A similar grasping motion can be observed in the feet of infants. These behaviors typically persist until four or five months of age, and might have been useful to our hairier ancestors, who could have been clung to by their offspring while they were traveling.
1) Erector Pili

When you're cold or stressed out, your arrector pili are the smooth muscle fibers that contract involuntarily to give you "goose bumps." If you're a furry woodland creature, this can provide insulation (thick, standing fur traps air between the erect hair follicles, helping the animal retain heat), or make you look bigger (which can mean the difference between being eaten and being passed over for less troublesome prey, a particularly good example being a porcupine). Since most humans aren't hairy enough to fit the "furry woodland creature" bill, our arrector pili provide neither of these benefits.