

Bone Transplant Pre/Post-Quiz Answer Key

- Where is a bird's femur located?
 - wing
 - thorax
 - leg
 - skull
- Are bird bones *more* or *less* dense than human bones?
Less dense
- Describe what causes birds to have bone density that is different from humans.
Unlike humans, birds have hollow bones.
- Why do birds need to have a bone density that is different from humans?
Birds need bones with low density to aid in flying; low-density bones weigh less.
- True or False? 3D printing is useful for creating industrial parts, but is not very useful in the medical field.
- True or False? 3D printers only use different types of plastic filament to create objects.
- How would you calculate the density of an object that has an irregular shape?
Take the mass of the object. Then, fill a graduated cylinder with water to a certain level and record that level. Next, place the object in the cylinder and record the new water level. Calculate the difference in the water levels; this is the volume of the object. Calculate the density by dividing the mass of the object by its volume.
- Describe how engineers use the steps of the engineering design process to create new products.
Engineers are guided by the steps of the engineering design process as they create possible solutions to problems; the steps include: researching the problems, developing possible solutions, creating prototypes, testing the prototypes, and redesigning as necessary to achieve a solution.
- What types of products might biomedical engineers be involved in designing?
Expect answer to vary. Example answers: replacement limbs, prosthetics, organs, heart stents, etc.