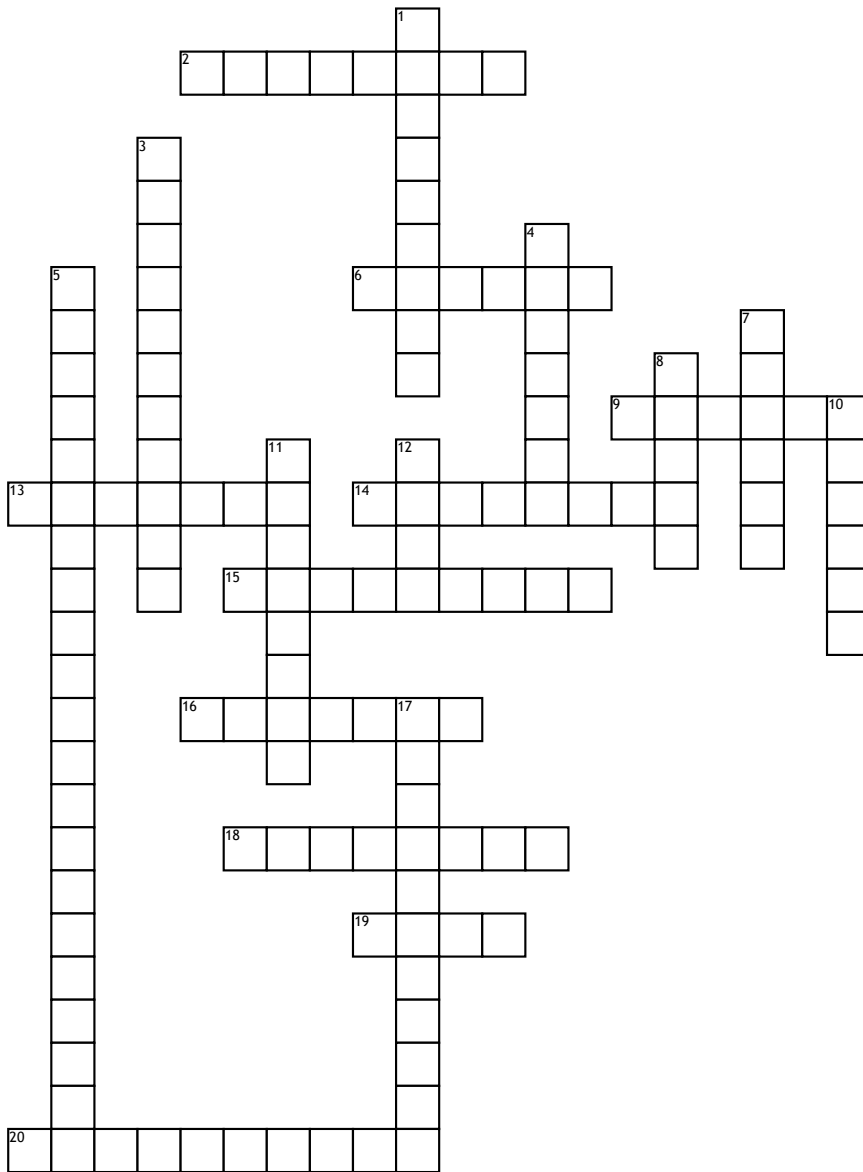


# forces and structures



## Across

2. the force or forces that act in or on a structure but are not apart of the structure; an example is the wind  
 6. thread like materials that makeup plant and animal tissue as well as some manufactured materials.  
 9. a specification of an object, manifested by some agent, intended to accomplish goals, in a particular environment, using a set of primitive components, satisfying a set of requirements, subject to some constraints.  
 13. a device to measure mass; many balances work by using the force of gravity  
 14. the primary measurement of mass in SI, equal to 1000 grams.

15. sticky substances such as glue or epoxy cement, that is used to bond materials together.  
 16. a process in which melted material is applied to to a different material when heated, forming a rigid joint  
 18. of a structure or object, its main purpose  
 19. the amount of matter in a substance; often measured with a balance  
 20. a branch of philosophy that studies the principles of beauty; the properties of an object that make it pleasing

## Down

1. of materials, made up of several different materials, with various properties to fulfil a specific purpose  
 3. a device used to measure the force of gravity exerted on an object by measuring the objects weight in newtons

4. a process in which peices of metal or plastic are fused together by the application of heat  
 5. an object or a structure that is made by humans  
 7. the force of gravity exerted on a mass  
 8. horizontal supports used to hold the wait of the object above  
 10. the standard unit of force in the SI  
 11. the weight of a structure upon itself  
 12. devices used to give strength to a structure, usually by forming a rigid triangle where the pieces come together.  
 17. the direction in which a structure, such as a beam, carries the least load