Lesson:	Name:
Teacher:	Date:

1. A soccer ball is kicked across the grass and eventually slows down. What force mainly causes it to stop?

   a) Friction
   b) Inertia
   c) Magnetism
   d) Gravity

2. A book is sliding across a desk but slows down and stops. Which statement BEST explains what happened?

   a) Gravity increased
   b) The book lost mass
   c) The desk pushed it forward
   d) Friction opposed the motion

3. Which of the following is a non-contact force?

   a) Gravity
   b) Friction
   c) Push
   d) Pull

4. A student pushes a cart with 15 N of force. Another student pushes in the opposite direction with 15 N. What will happen?

   a) The cart accelerates forward
   b) The cart does not move
   c) The forces increase its speed
   d) The cart accelerates backward

5. A 4-kg object accelerates at 3 m/s². What is the net force acting on the object?

   a) 12 N
   b) 4 N
   c) 7 N
   d) 3 N

6. Which situation shows balanced forces?

a) A rocket blasting upward
b) A book resting on a table
c) A car accelerating at a green light
d) A ball rolling down a hill

7. A magnet pulling a paperclip involves what type of force?

a) Friction
b) Applied
c) Magnetic
d) Electrical

8. A car moves at a constant speed on a straight road. Which statement is TRUE?

a) Net force is zero
b) Friction is stronger than the engine force
c) Net force is increasing
d) Gravity is removed

9. When a parachute opens, what force increases to slow the skydiver down?

a) Electrical force
b) Air resistance
c) Gravity
d) Magnetic force

10. A student pushes a 2-kg box with 10 N of force. The box accelerates at 4 m/s^2. How much friction is acting?

a) 6 N
b) 10 N
c) 2 N
d) 4 N

11. A team created a prototype bridge, but it collapsed when tested. Which design step should they return to?

a) Communicate the plan
b) Improve and redesign
c) Identify the problem
d) Test the solution

12. Students are asked to build a structure that can hold 20 textbooks. What is this describing?

a) Materials
b) Constraints
c) Brainstorming
d) Criteria

13. A team has only 20 minutes and limited materials. What part of the design process are these details?

a) Constraints
b) Criteria
c) Improvements
d) Prototype

14. Students draw different possible bridge shapes before choosing one. What step is this?

a) Communicate
b) Research
c) Plan and brainstorm ideas
d) Test

15. After testing their bridge, students write a report explaining what happened and what they would fix. Which step is this?

a) Plan
b) Imagine
c) Improve
d) Identify

16. A group discovers their bridge holds weight but sways too much. What should they do first?

a) Identify the problem with stability
b) Ignore it and continue
c) Start from scratch
d) Use cheaper materials

17. Students want to reduce bending in the center of their model bridge. Which improvement is MOST effective?

a) Remove glue
b) Make the bridge longer
c) Paint the bridge
d) Add extra supports or trusses

18. During testing, the teacher announces the load capacity will increase from 3 kg to 5 kg. What changed?

a) Problem
b) Constraints
c) Criteria
d) Materials

19. Which scenario shows the testing stage?

a) Talking about solutions
b) Choosing shapes
c) Measuring how much weight the bridge holds
d) Listing materials

20. A team must finish their design using only 50 sticks and 30 minutes. What is this?

a) Constraints
b) Criteria
c) Brainstorming
d) Testing

21. A team builds 3 prototypes and tests each one. Why is this a good engineering strategy?

a) More prototypes save time
b) It allows comparing designs
c) It removes constraints
d) It guarantees success

22. A student drops a weight onto their bridge model to test strength. What force is acting downward?

a) Friction
b) Air resistance
c) Magnetism
d) Gravity

23. A bridge needs to support a moving load (like cars). Which force will vary the most?

a) Gravity
b) Magnetic force
c) Applied force
d) Normal force

24. After testing, students find cracks in the joints of their bridge. What is the MOST reasonable next step?

a) Stop the project
b) Add reinforcements and retest
c) Add decorations
d) Change the color

25. A team records data showing how much weight their bridge held before breaking. What part of the process is this?

a) Plan
b) Communicate results
c) Imagine
d) Research

26. Match the following types of friction to their examples.

○ Static Friction

○ Rolling Friction

○ Sliding Friction

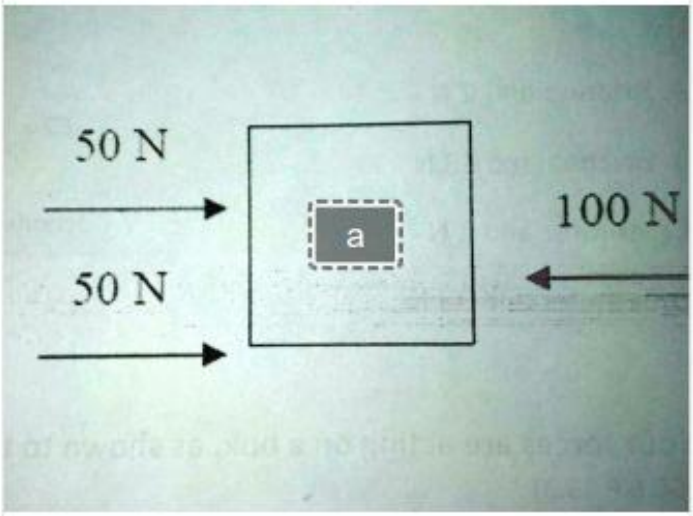
27. (a) _____ is a force that always resists the relative motion of objects or surfaces.

Choose from the below words

Friction | Static Friction | Sliding Friction

28. What is the net force of this example?

0N | 200N | 100N



a)

b)

c)

29. Match the following

m/s^2	Force
kg	Mass
N	Acceleration

30. What is the net force?

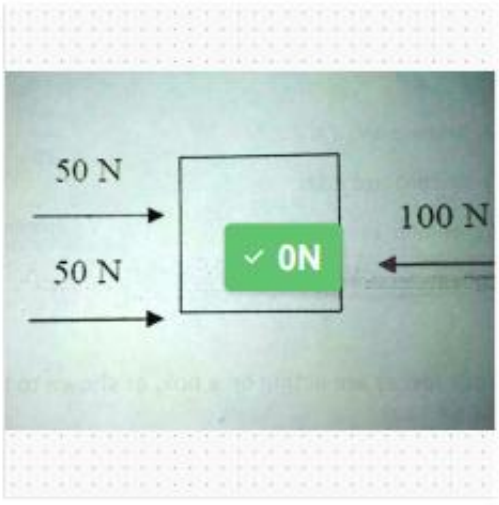
a) 3 N

b) 3 N, right

c) 17 N, right

d) 3 N, left

Answer Keys

1. a) Friction
2. d) Friction opposed the motion
3. a) Gravity
4. b) The cart does not move
5. a) 12 N
6. b) A book resting on a table
7. c) Magnetic
8. a) Net force is zero
9. b) Air resistance
10. c) 2 N
11. b) Improve and redesign
12. d) Criteria
13. a) Constraints
14. c) Plan and brainstorm ideas
15. c) Improve
16. a) Identify the problem with stability
17. d) Add extra supports or trusses
18. c) Criteria
19. c) Measuring how much weight the bridge holds
20. a) Constraints
21. b) It allows comparing designs
22. d) Gravity
23. c) Applied force
24. b) Add reinforcements and retest
25. b) Communicate results
26. - Static Friction, - Rolling Friction, - Sliding Friction
27. Friction
28. 

29. N - Force, kg - Mass, m/s^2 - Acceleration
30. b) 3 N, right