Everyday Physics: Forces, Energy, and Motion in Real Life (Fizyka codzienna: siły, energia i ruch w życiu codziennym)

📚 Słownictwo – 30 kluczowych słów i zwrotów

1. **gravity** – grawitacja
2. **force** – siła
3. **energy** – energia
4. **friction** – tarcie
5. **mass** – masa
6. **weight** – waga
7. **acceleration** – przyspieszenie
8. **velocity** – prędkość
9. **speed** – szybkość
10. **motion** – ruch
11. **inertia** – bezwładność
12. **momentum** – pęd
13. **work (physics)** – praca
14. **power** – moc
15. **kinetic energy** – energia kinetyczna
16. **potential energy** – energia potencjalna
17. **air resistance** – opór powietrza
18. **traction** – przyczepność
19. **impact** – uderzenie / zderzenie
20. **pressure** – ciśnienie
21. **heat / thermal energy** – ciepło / energia cieplna
22. **vibration** – drganie
23. **balance** – równowaga
24. **center of gravity** – środek ciężkości
25. **tension** – naprężenie
26. **compression** – ściskanie
27. **elasticity** – sprężystość
28. **simple machine** – maszyna prosta
29. **lever** – dźwignia
30. **pulley** – bloczek

🗣️ Dialogi (praktyczne konwersacje B1–B2)

Dialogue 1: Explaining Gravity to a Child

A: Why does everything fall down?
B: Because of gravity. It pulls things toward the Earth.
A: Even my toys?
B: Yes—even you when you jump!

Dialogue 2: Friction on the Road

A: Why do tires slip on ice?
B: There's less friction between the tire and the surface.
A: So friction keeps us from sliding?
B: Exactly—it gives us traction.

Dialogue 3: In the Gym

A: I lifted 10 kg, but it felt heavier when I moved fast.
B: That's because of acceleration—it increases the force needed.
A: Physics in the gym—who knew?
B: It's all about motion and energy.

Dialogue 4: At the Park

A: Why does the swing slow down by itself?
B: Friction and air resistance reduce its energy.
A: So it needs a push to keep moving?
B: Yes, that adds kinetic energy again.

Dialogue 5: Simple Machine at Home

A: What's that tool?
B: It's a lever—it helps lift heavy things more easily.
A: Like a seesaw?
B: Exactly. It's one of the simplest machines in physics.

📝 Ćwiczenie 1: Wstaw brakujące słowa

Słowa do użycia:
gravity, force, friction, energy, motion, acceleration, weight, center of gravity, lever, potential energy

Tekst z lukami:

1. **(1)** _____ pulls everything toward the ground.
2. When you push an object, you apply a **(2)** _____.
3. The ball slowed down due to **(3)** _____ from the grass.
4. Climbing stairs increases your **(4)** _____.
5. The car gained speed because of **(5)** _____.
6. The swing moves back and forth in a regular **(6)** _____.
7. On Earth, your **(7)** _____ depends on your mass.
8. A **(8)** _____ helps balance objects on a fixed point.
9. The box fell when its **(9)** _____ shifted too far.
10. At the top of a hill, the rock has **(10)** _____.

📝 Ćwiczenie 2: Przetłumacz brakujące słowa z polskiego na angielski

1. **(Grawitacja)** działa zawsze w kierunku środka Ziemi.
2. **(Tarcie)** między butem a ziemią pozwala nam chodzić.
3. Przy większym **(przyspieszeniu)** potrzeba większej siły.
4. Energia w ruchu to **(energia kinetyczna)**.
5. Gdy coś się nie porusza, działa **(bezwładność)**.
6. Ciepło to forma **(energii cieplnej)**.
7. Balansujemy, kontrolując nasz **(środek ciężkości)**.
8. Dźwignia to przykład **(maszyny prostej)**.
9. Pociąg ma ogromny **(pęd)** przy dużej prędkości.
10. **(Ciśnienie)** rośnie, gdy zmniejszamy powierzchnię.

❓ Quiz ABCD – wybierz poprawną odpowiedź

1. What is “gravity”?
   A. A form of light
   B. A type of speed
   C. A force that pulls objects toward Earth
   D. A machine
2. What does “friction” do?
   A. Speeds objects up
   B. Makes things fly

C. Slows things down due to surface contact
D. Changes energy into mass

3. What is “kinetic energy”?
   A. Stored energy
   B. Energy of motion
   C. Energy from food
   D. Energy in silence
4. What is a “lever”?
   A. A type of pulley
   B. A simple machine for lifting
   C. A heavy weight
   D. A chemical
5. What is “mass”?
   A. Weight on the Moon
   B. A unit of distance
   C. The amount of matter in something
   D. A way to measure friction
6. What is “inertia”?
   A. A machine
   B. Resistance to change in motion
   C. A type of speed
   D. A temperature
7. What is “center of gravity”?
   A. A point where weight is balanced
   B. A place on Earth
   C. A type of force
   D. A kind of energy
8. What is “acceleration”?
   A. Moving slower
   B. A measure of pressure
   C. A decrease in friction
   D. An increase in speed over time
9. What is “air resistance”?
   A. Gravity in the air
   B. Friction caused by air
   C. Pressure from water
   D. Force of the ground
10. What is “potential energy”?
    A. Energy in motion
    B. Energy that has been lost
    C. Stored energy due to position
    D. Used energy

✅ KLUCZ ODPOWIEDZI

Ćwiczenie 1:

1. gravity
2. force
3. friction
4. energy
5. acceleration
6. motion
7. weight
8. lever
9. center of gravity
10. potential energy

Ćwiczenie 2:

1. gravity
2. friction
3. acceleration
4. kinetic energy
5. inertia
6. thermal energy
7. center of gravity
8. simple machine
9. momentum
10. pressure

Quiz:

1. C
2. C
3. B
4. B
5. C
6. B
7. A
8. D
9. B
10. C