

Name _____

Class _____

Date _____

By the end of this worksheet I can...

- ☐ describe the roles of mechanical, electrical, electronic, civil, structural, chemical and environmental engineers
- ☐ tell the difference between an electrical and an electronic engineer
- ☐ explain how engineers use specialised knowledge and work together in a project

I DO

Worked example Read how a full-mark answer is built

A new road is being built through farmland.

1 Name two types of engineer who would monitor the road construction and its impact on the land. (2 marks)

Points that earn marks from the marking instructions: one ✓ per point

- ✓ Civil engineer
- ✓ Environmental engineer

WE DO

Guided practice Use the starters and word bank to help you

A new hospital is being designed.

2 Describe the role of an electrical engineer and an electronic engineer in the project. (2 marks)

Sentence starters

Electrical: ...

Electronic: ...

Word bank

designs · lighting · Power · supply · standby ·
electrical · distribution · wiring

Tip: 2 marks = 2 separate, developed points.

YOU DO

On your own No notes. Check your answers afterwards.

3 Quick check: tick one box for each.

- a) Which engineer designs a bridge's foundations and road layout?
☐ Civil ☐ Electronic ☐ Chemical ☐ Electrical
- b) Designing a gearbox for an e-bike is work for a...
☐ Structural engineer ☐ Civil engineer ☐ Chemical engineer ☐ Mechanical engineer
- c) Monitoring how road building affects local wildlife is work for a...
☐ Mechanical engineer ☐ Electrical engineer ☐ Environmental engineer ☐ Chemical engineer
- d) Who designs the control circuit and selects sensors?
☐ Civil ☐ Electronic ☐ Chemical ☐ Environmental

4 Key terms: write the letter of the matching description next to each term.

- | | | |
|-------------------------------|-----|--|
| 1. Civil engineer | ___ | A Machines, moving parts, drive systems and pneumatics. |
| 2. Structural engineer | ___ | B Processes that change materials, e.g. fuels and batteries. |
| 3. Mechanical engineer | ___ | C Large infrastructure: roads, bridges, dams, railways. |
| 4. Electrical engineer | ___ | D Circuits, sensors, microcontrollers and control. |
| 5. Electronic engineer | ___ | E Power generation, distribution, motors and wiring. |
| 6. Chemical engineer | ___ | F Strength and stability of structures: forces and materials. |

Engineers from different disciplines worked together to design a new electric tram.

5 Explain how the engineers' specialised knowledge is used during the design. (2 marks)

A structural engineer and an environmental engineer work on a new offshore wind farm.

6 Describe the skills each engineer would bring to the project. (4 marks)

Check and reflect

Mark your answers with the answer sheet. Go back to the checklist on the site and re-rate each “I can” statement above. Which one still needs work?
