Unit 202: Changing Practices Over Time

# Worksheet 3: 21st century construction techniques and technologies (tutor)

Task 1: State two advantages and two disadvantages for each of the following:

Smart heating controls

|  |  |
| --- | --- |
| Advantages | Disadvantages |
| A range of automation features | Internet dependence |
| Remote control of heating and hot water through smartphone apps | Compatibility with existing heating and hot water system |
| Auto-schedule feature learns from your behaviour and intelligently adapts | Expensive to install compared to standard programmable stats |
| Monitor and stay informed of energy usage |  |

Heat pumps

|  |  |
| --- | --- |
| Advantages | Disadvantages |
| Reduced carbon emissions | Expensive to install |
| Long life span and relatively low maintenance | Existing heating systems may require extensive upgrades |
| Financial incentives to help offset the initial installation costs | Temperature limitations |
| High energy efficiency | Not suitable for every home |

Renewable hydrogen

|  |  |
| --- | --- |
| Advantages | Disadvantages |
| Potential for zero emissions | Energy intensive production |
| Clean and environmentally friendly | Highly flammable and volatile |
| Abundant and renewable | High production and infrastructure costs |
| Reduced dependence on fossil fuels | Difficult to store |
|  | Expensive to produce |

Task 2: Work on your own to answer the following questions.

1. What is the chemical formula for hydrogen?
2. H5
3. CO
4. **H2**
5. H20
6. In relation to trade associations, what does the abbreviation CIPHE mean?
7. Chartered Inspectors of Plumbing and Heating Engineering
8. Chartered Installers of Plumbing and Heating Engineering
9. Chartered Industry of Plumbing and Heating Engineering
10. **Chartered Institute of Plumbing and Heating Engineering**
11. The UK aims to achieve “net zero” emissions by which year?
12. 2030
13. 2040
14. 2065
15. **2050**
16. Which building regulation deals with the conservation of fuel and power?
17. Approved Document Part H
18. Approved Document Part P
19. Approved Document Part A
20. **Approved Document Part L**
21. Which environmental technology converts a low-temperature heat source to a higher-temperature using the refrigeration cycle?
22. Hydrogen fuel cell
23. **Heat pumps**
24. Combination boilers
25. District heating
26. Renewable hydrogen refers to hydrogen gas that is produced using renewable energy sources. Which of the following would be classed as a renewable source?
27. **Wind**
28. Coal
29. Oil
30. Natural gas
31. Which of the following is a type of heat pump?
32. Wind source
33. Rainwater source
34. Hydropower source
35. **Ground source**
36. Who is the official gas registration body for the United Kingdom?
37. Corgi
38. **Gas Safe**
39. Blue Flame
40. Safe Gas