

Name:

Class:

Task: In DT, CAD/CAM has become a big part of our subject and how it allows us to create such high quality final pieces. Read the information below and complete the questions.

CAD (computer-aided design) is the use of computer-based software to aid in design processes. CAD software is frequently used by different types of engineers and designers. CAD software can be used to create two-dimensional (2-D) drawings or three-dimensional (3-D) models.

The purpose of CAD is to optimize and streamline the designer's workflow, increase productivity, improve the quality and level of detail in the design, improve documentation communications and often contribute toward a manufacturing design database. CAD software outputs come in the form of electronic files, which are then used accordingly for manufacturing processes.

CAD is often used in tandem with digitized manufacturing processes. CAD/CAM (computer-aided design/computer-aided manufacturing) is software used to design products such as electronic circuit boards in computers and other devices.

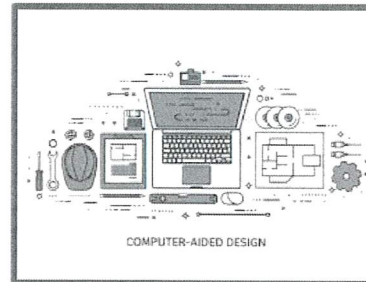
Who uses CAD?

Computer-aided design is used in a wide variety of professions. CAD software is used heavily within various architecture, arts and engineering projects. CAD use cases are specific to industry and job functions. Professions that use CAD tools include, but are not limited to:

Architects	Engineers	City planners	Graphic designers	Animation illustrators	Drafters	Fashion designers
Interior designers	Exterior designers	Game designers	Product designers	Industrial designers	Manufacturers	CAD benefits

Compared to traditional technical sketching and manual drafting, the use of CAD design tools can have significant benefits for engineers and designers:

- Lower production costs for designs;
- Quicker project completion due to efficient workflow and design process;
- Changes can be made independent of other design details, without the need to completely re-do a sketch;
- Higher quality designs with documentation (such as angles, measurements, presets) built into the file;
- Clearer designs, better legibility and ease of interpretation by collaborators, as handmade drawings are not as clear or detailed;
- Use of digital files can make collaborating with colleagues more simple; and
- Software features can support generative design, solid modeling, and other technical functions.



CAD software/tools

A number of CAD tools exist to assist designers and engineers. Some CAD tools are tailored to fit specific use cases and industries, such as industrial design or architecture. Other CAD software tools can be used to support a variety of industries and project types. Some widely-used CAD tools are:

MicroStation (offered by Bentley Systems)	AutoCAD (offered by Autodesk)	CorelCAD	IronCAD	CADTalk	SolidWorks	Onshape
Catia	LibreCAD	OpenSCAD	Vectorworks	Solid Edge	Altium Designer	2D Design

Computer Aided Design

Positives	Negatives
-This can be more accurate than hand-drawn designs and it reduces human error.	-Initial costs are high as the software can be expensive although there are free software packages.
-Existing ideas can be modified which would save time for the user.	-A PC is required to do this. Which is a further expense
-Ideas can be saved and edited easily which saves time and it makes it cheaper to modify as you go along.	-Staff need to be trained to work on this software, which adds more to the final cost.
- Less storage space needed	- Computers can be Hacked and information stolen
-Designs can be emailed across country or worldwide	-Files can become corrupted and unable to retrieve

Computer Aided Manufacture

Positives	Negatives
-The results are the same in large-scale manufacture.	-The software is very expensive itself so the initial cost is high.
-There are very high accuracy levels in large scale production.	-It can be slower than traditional methods for one-off or low-volume production.
-Production of low volume products is normally sped up.	-Staff need to be trained how to use the software and machinery, which tops up the costs.
-Can be faster and efficient	-Many staff will lose jobs as machines don't need break
-Can become more cost effective	



What is CAD and what is its primary purpose?

What types of models can CAD software create?

How does CAD software contribute to manufacturing processes?

List five professions that commonly use CAD software.

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What are some benefits of using CAD tools compared to traditional technical sketching and manual drafting?

Name three specific CAD tools and the companies that offer them.

Give 3 positives and negative of CAD?

Positives	Negatives

Give 3 positives and negative of CAM?

Positives	Negatives

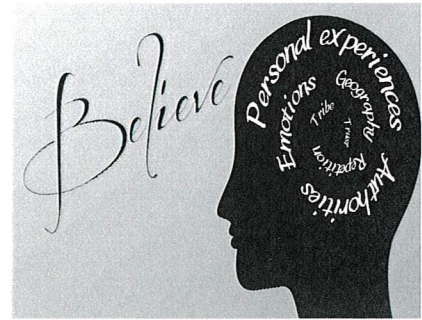
What is CAD/CAM, and how is it used?

Identify two industries or project types where specific CAD tools are tailored for use.

Year 7 RS HL

Why Do People Believe or Not Believe in God?

Believing in God: Many people around the world believe in God for various reasons. One significant reason is the influence of family and culture. People often grow up in families and communities where belief in God is a normal part of life. They learn about God from their parents, religious leaders, and cultural traditions. This early exposure shapes their beliefs and practices.



Personal experiences also play a crucial role in why some people believe in God. These experiences might include feeling comforted during difficult times, having prayers answered, or witnessing what they believe to be miracles. Such events can reinforce their faith and conviction in the existence of a higher power.

The beauty and complexity of nature and the universe can also lead people to believe in God. When they see the intricate designs in nature, from the smallest insect to the vastness of space, they might feel that such complexity must have been created by a higher power. This sense of awe and wonder often strengthens their belief.

Believing in God can provide people with a sense of purpose and meaning in life. It helps them feel connected to something bigger than themselves and gives their lives direction. Additionally, many people find that their belief in God offers moral guidance. They rely on their faith to understand right from wrong and to make decisions in their daily lives.

Not Believing in God: There are also many people who do not believe in God, and their reasons are equally varied. One common reason is the reliance on scientific explanations to understand the world. These individuals trust in science to explain natural phenomena and the origins of the universe, often feeling that natural processes, rather than a divine being, are responsible for the world around them.

Another reason some people do not believe in God is the lack of concrete evidence. They may feel that there is no definitive proof of God's existence and therefore remain skeptical. This perspective is often based on the idea that beliefs should be grounded in empirical evidence.

Different upbringings can also influence belief or non-belief in God. Just as some people grow up in religious families, others are raised in environments where belief in God is not common or emphasized. This lack of exposure can lead them to question or reject the concept of a higher power.

Personal experiences, particularly negative ones, can also lead some people to not believe in God. Experiences of suffering, loss, or injustice might make them question the existence of a benevolent deity. These individuals may struggle to reconcile their experiences with the idea of an all-powerful, loving God.

Finally, some people adopt philosophical beliefs that do not include the concept of God. Humanism, for example, emphasizes human values and reason without relying on divine beings. Humanists believe in the potential of human beings to solve problems and create meaning in their lives through rational thought and compassion.

Home Learning - Read and use the information about belief in God to answer the questions below. You will be tested on these in the next lesson.

Write in full sentences:

1. **Why do some people believe in God because of their family and culture?**
2. **How can personal experiences lead someone to believe in God?**
3. **What might make someone see the beauty of nature as a reason to believe in God?**
4. **How does believing in God give people a sense of purpose and meaning?**
5. **In what way does belief in God provide moral guidance?**
6. **Why do some people prefer scientific explanations over belief in God?**
7. **What is a reason some people do not believe in God related to evidence?**
8. **How can different upbringings influence belief or non-belief in God?**
9. **What kind of personal experiences might lead someone to not believe in God?**
10. **What is humanism and how does it differ from believing in God?**