

March

Spend 10 minutes a day revising the topic / answering the question in the calendar.

1

Explain what is meant by the term 'smart material'. Give 3 examples of smart materials.

2

Who is Harry Beck? Who is Sir Alec Issigonis? What is each person famous for designing?

3

State 3 thermosetting polymers and give an example of a product that would typically be made from each.

4

Give 2 reasons for and 2 reasons against using nuclear power.

5

Name the 6R's and define each of them.

6

Explain three different methods that could be used to create a quality control process.

7

Sketch out the key stages of injection moulding, along with a written step by step.

8

What is a nanomaterial? Give an example of one and where it would be used.

9

Why might a company choose to use robots on its production line rather than humans?

10

Give three things that you could consider when trying to select an appropriate material for a particular use.

12

What are the key difference between softwoods and hardwoods? Why is this so?

11

Why can it be harmful to the environment if a company keeps releasing new versions of a product?

12

What is the source material for metals? How are metals extracted from these?

13

What makes a metal ferrous? Name 3 ferrous metals.

14

Name 4 types of paper and link them to their typical uses.

15

Name three examples of finite resources.

16

What is meant by the term 'down time' during batch production?

17

What is planned obsolescence? Give an example to illustrate your answer.

18

What is a standard component? Give 3 examples of standard components.

19

If a business is owned and run by its members it is called a what?

20

Name 4 different types of motion. Link to types of products that use/show these motions.

21

What makes a foil lined juice carton difficult to recycle?

22

Give a property of corrugated cardboard and explain how this makes it a useful material

23

What stock forms do polymers tend to be available in?

24

What does CAM stand for? Give two examples of CAM and explain them.

25

Name 2 natural fibres and give their appearance, properties and uses.

26

Define the term composite material. Give an example of one and two properties of it.

27

What is a depth stop and how it is used?

28

Explain what is meant by market pull and technology push. Give examples of products for both.

29

Cams can change rotary motion to reciprocating. Name and draw four different cams and explain how they work.

30

What is tolerance? Why do we work with a tolerance?

31

Name 2 ways in which energy can be stored.

April

Spend 10 minutes a day revising the topic / answering the question in the calendar.

1

Define what is meant by the term 'alloy'. Give 3 examples of alloys.

2

Choose a any product and sketch it with adjustments so that it could be used by a blind person.

3

Choose any product and complete a life cycle assessment on it.

4

State two different joining methods and explain how they are used/created and what material they are used on

5

What is the company Braun known for making? What is their approach to design?

6

Explain the difference between woven, knitted and non-woven fabrics.

7

What are 'ergonomics'? How might a designer create an ergonomically friendly product.

8

Give 4 H&S rules for working with power and/or machine tools.

9

State two aesthetics reasons that finishes are applied to materials.

10

Sketch out the key stages of vacuum forming, along with a written step by step.

12

Define the term carbon footprint. Choose any product and analyse its carbon footprint.

11

Name 3 ways you could carry out market research.

12

What is a design specification and how is it used by a designer and/or manufacturer?

13

What is the source material for the majority of polymers used by society?

14

Name 3 hardwoods and give an example of a product that would typically be made from each.

15

Explain what is meant by crowdfunding? How can it be used by a designer?

16

There are 5 key forces you need to know; tension, compression, shear, bending and torsion. Draw a diagram that illustrates each one.

17

What is the difference between thermoforming and thermosetting polymers? Draw the molecular structure of each.

18

Explain what is meant by the term 'modern material'. Give 3 examples of modern materials.

19

Who is Mary Quant? Who is Vivienne Westwood? What is each person famous for designing?

20

What is a pulley and how does it work?

21

What does CAD stand for? Give two examples of CAD and explain them.

22

Explain what is meant by the term 'iterative design process'.

23

What is a push/pull linkage?

24

Choose any product around you and complete a product analysis on it.

25

What are the differences between a bio-plastic and an oil-based plastic?

26

State 3 advantages that manufactured boards have over natural timbers.

27

What is a knock down fitting and how do they work? What are they used for?

28

State 4 non-ferrous metals and give an application for each one.

29

Sketch out the key stages of blow moulding, along with a written step by step.

30

What does it mean to design for the 5th – 95th percentile of people?

May

Spend 10 minutes a day revising the topic / answering the question in the calendar.

1
What is the source material for papers and boards?

2
What is a gear? How do they work? What is a gear ratio?

3
In what ways could a new product offend groups of people? Give examples in your answer.

4
State 3 advantages that natural timbers have over manufactured boards.

5
What is a jog, template, pattern and mould? Why would they be used during production?

6
What is meant by the term 'design for maintenance'.

7
What is the difference between these scales of production? one-off, batch, mass and continuous.

8
What are 'anthropometrics'? How might a designer use these when creating a product?

9
What is the source material for timber? How is the source material converted into useable materials.

10
Name three examples of non-finite resources.

12
Describe what a bell crank is and how it works.

11
What is the company Alessi known for making? What is their approach to design?

12
State 3 thermoforming polymers and give an example of a product that would typically be made from each.

13
Sketch out the key stages of extrusion, along with a written step by step.

14
What is the process for turning crude oil into a useable polymer?

15
Explain what is meant by the term 'technical textile'. Give 3 examples of technical textiles.

16
In what ways can materials be reinforced? Give two examples.

17
Name 3 softwoods and give an example of a product that would typically be made from each.

18
What does CNC stand for? Give two examples of CNC and explain them.

19
Give an example of a first order, second order and third order lever.

20
Name 2 synthetic fibres and give their appearance, properties and uses.

21
Why is it important to develop ideas as a designer? In what ways could ideas be developed?

22
GCSE Exam
PM Start

23

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