

## Year 8 Art Knowledge Organiser: 'Architecture and Abstraction'

<b>architecture</b>	the style, design and construction of buildings or other physical structures
<b>architect</b>	a person who designs architecture
<b>linear</b>	consisting of or predominantly formed using lines or outlines
<b>contrast</b>	the difference between dark and light
<b>tone</b>	how dark or light a colour is
<b>monochrome</b>	a photograph or picture developed or executed in black and white or in varying tones of only one colour
<b>proportion</b>	the size of something in relation to something else
<b>collage</b>	a piece of art made by sticking various different materials such as photographs and pieces of paper or fabric on to a backing
<b>abstract</b>	art that does not attempt to represent reality, but rather seeks to achieve its effect using shapes, colours and textures
<b>juxtaposition</b>	the fact of two things being placed close together with contrasting effect
<b>composition</b>	the arrangement of the elements of art in an artwork
<b>structure</b>	the way in which the parts of something are connected, organised or arranged
<b>geometric</b>	characterised by or decorated with regular lines and shapes
<b>relief</b>	elements which raise up from / project from a supporting background
<b>asymmetrical</b>	having parts that fail to correspond to one another in shape, size, or arrangement; lacking symmetry
<b>spatial</b>	relating to or occupying space

Contemporary architecture is the architecture of the 21st century. No single style is dominant. Some designs are simplistic and modern in appearance, focusing on the use of steel, concrete, glass and new materials.

Some are sculptural and conceptual, and some prioritise the use of natural and ecological materials.



Frank Gehry



Santiago Calatrava



**Block printing** originated in East Asia. The technique existed in China as early as the 2nd century CE. Images and text were cut into blocks of wood and printed on silk cloth.

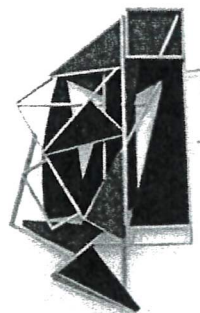


This traditional technique has found its place in modern industry, with designs often created in linoleum. Applied by hand or machine; the process is used to add surface decoration to textiles (such as clothing and fabric), stationery (cards and notebooks) and on decorative items like wall paper and other home decor.

### Clemens Behr

- German artist
- creates unique artworks and installations mainly with **found materials**
- artworks are **site-specific**
- structures which show a likeness to **origami**; combining **line, shape** and **form**
- **minimal colour** schemes, often **monochromatic**

*"My work is complicated, improvised ..and inexpensive."*



The **Rule of Thirds** is a **compositional technique** used to create visually effective images in art, photography and cinematography. Elements are placed spanning the vertical or horizontal lines that divide the space, or on the points where the lines cross.

**Year 8 Art Homework 1: Answer the following questions...**

1) What word describes the style, design and construction of buildings?

.....

2) What period of time is contemporary architecture associated with?

.....

3) Name an architect associated with the design of contemporary architecture:

.....

4) Give the meaning of 'contrast' in art:

.....

5) Explain the meaning of the term 'monochrome':

.....

6) Define 'proportion':

.....

7) List three things that could be seen in an item of abstract art:

.....

8) From which continent does block printing originate?

.....

9) What material was originally used to carve images and text from?

.....

10) List three characteristics of the work of German artist Clemens Behr:

.....

.....

.....

11) What is the meaning of 'juxtaposition'?

.....

.....

12) When using the Rule of Thirds to help arrange a composition, where should key elements be placed?

.....

.....

There are many ways in which computers can be attacked by both other computers and people. This sheet looks at all the methods of attack involving computers.

**WARNING: This sheet discusses ways in which computers and networks are misused. It is illegal to use these techniques yourself.**

### Brute-force attacks

Most computer security relies on a **password**. **Encryption** also relies on a password or **key**. If a user knows the password to a computer system they can often have unlimited ability to misuse it or steal documents or programs. One method of cracking a password is to use a **brute-force attack**. This repeatedly goes through every combination of password. The program tries every letter or number for the first character, and every combination of letter or number for the first and second characters and so on until a password is found. A computer can do this very quickly for short passwords, but takes more time if the password is long. To help prevent brute-force attacks, software will often disable access, even with the correct password, after a certain number of failed attempts.

To make passwords hard to crack with a brute-force attack you should make sure you use a long password which uses many different characters. For instance, if we use uppercase and lowercase letters with numbers we have  $26+26+10=62$  different characters to choose from. If the password is 10 characters long then it will have  $62^{10}$  different combinations. This is 839 million billion different combinations and will take a computer a long time to find the answer. It is important not to just use a common word as a **dictionary attack** would easily find this. This method of attack tries every word in a dictionary to crack the password and needs only around 100,000 comparisons.

### Denial of service attacks

Networks allow client computers to send **requests** to servers. These must be processed, which normally requires more processing than sending the request did. If too many requests are sent for the server to handle then the server will not be able to respond. This will leave either a slow service or no service at all. One way of carrying this out is to perform a **ping flood** where many **ping packets** are sent to a computer which it then has to respond to. If the computer can send the packets faster than the other computer can receive and reply to them then there will be no processing power left for anything else. It is easy to prevent a denial of service attack from one computer by blocking the IP address of the computer sending the packets. However, if many computers are sending the packets it becomes a lot harder. This is known as a **distributed denial of service attack**.

### SQL injection

**SQL statements** are used to **select** and **delete** information from a database. The statement

```
DROP TABLE users;
```

would delete every user in a table called users. To select a user's date of birth from a social network a website might execute the SQL code:

```
userDetails = "SELECT * FROM users WHERE name=" + username + ";
```

This statement would replace the variable *username* with whatever the user typed into the website. If instead of a username the user typed

```
a'; DROP TABLE users
```

then the following query would be used:

```
SELECT * FROM users WHERE name=a; DROP TABLE users;
```

The whole users table would be deleted as a result. This type of attack is known as an **SQL injection**. It involves injecting SQL code into variables so that they are run on the database server. Prevention of this attack is by carrying out very careful **validation** of any data input to **variables**.

1. Match the type of attack on the left with the explanation on the right.

Brute-force	Make SQL code execute in a variable
Denial of service	Try every password combination
SQL injection	Send too many requests to a server

[3]

2. Which of the following will make a password stronger? Tick **three** boxes.

- A longer password
  - A shorter password
  - Something easy to remember
  - Using special characters or numbers
  - Using upper and lowercase letters
  - A common word
- [3]

3. When a denial of service attack occurs on a website what are other users likely to experience? Tick **two** boxes.

- They won't notice it but the data will be harmed in the database
  - The website will slow down
  - Abusive text will appear where hackers have changed the homepage
  - The website may crash and either nothing or an error page appears
- [2]

4. SQL injection affects what type of servers? Fill in **one** circle.

- Print servers
  - Email servers
  - Database servers
- [1]

5. How can SQL injection be prevented?

\_\_\_\_\_

[1]

6. Complete the text below with the words beneath.

Passwords need to be sufficiently difficult that a computer cannot crack them. The simplest form of attack is to try every combination of password.

This is known as a \_\_\_\_\_. Using a mixture of uppercase and lowercase letters along with numbers and special characters will make it harder to crack the \_\_\_\_\_ as there will be many more possibilities for each character. Using a single \_\_\_\_\_ is not suitable as a computer can try every word in the dictionary. This is known as a \_\_\_\_\_.

**password**    **English word**    **dictionary attack**    **brute-force attack**

[4]

7. A password uses uppercase and lowercase letters along with numbers.

a) How many possibilities are there for each character in the password? \_\_\_\_\_ [1]

b) If the password is eight characters long, how many combinations are there? \_\_\_\_\_ [1]

8. A password makes use of three simple English words chosen from a dictionary with 10,000 words in it. How many combinations are there for the password? \_\_\_\_\_ [1]

9. It is possible for a computer to send Ping packets as fast as possible to another computer or server. What is this process called? \_\_\_\_\_ [1]

10. If many computers on the Internet try to flood a server with requests this will cause the server to slow down or stop working. This is what kind of attack? \_\_\_\_\_ [1]

11. The following SQL query is written where *username* is a variable. This variable takes information from a username text field on a website.

```
SELECT * FROM hobbies WHERE name=" + username + " ,"
```

A user enters the following username: w'; DROP TABLE hobbies  
What happens to the table hobbies? \_\_\_\_\_ [1]