

Abstraction/Decomposition Challenge

Abstraction & Decomposition

Abstraction is the process of removing unnecessary detail and focusing on the overview – this allows programs to run faster and use less memory.

Decomposition is the process of breaking large, complex problems into smaller, manageable parts. This helps the brain of the computer (the CPU – Central processing unit) function better.

The Challenge – Guess Who

You're going to be playing a game of guess who! You can play with a minimum of 2 people.

Step 1 – Cut out the picture cards or write out the names/look at the pictures on a screen.

Step 2 – in turns, choose one of the people (don't let anyone know). The other player(s) should then ask questions to find out who you've chosen. Yes/No are the only answers allowed. If someone guesses correctly, they get a point.

Step 3 – Once a picture has been used take it out of play.

What You'll Need

Pens/pencils
The picture cards
At least two people

Why are we doing this?

Abstraction can help us to use decomposition effectively. By removing unnecessary detail and focusing on the important elements, there is less information to decompose. This means that less memory is used, and the processing speed of computers is faster.

Extension

Add in some extra people of your own to make the game last longer!

To make it more challenging, limit the number of questions: you could allow 10, then allow 8, then allow 5, and so on.

Alternatively, you could add a timer to each round.

Bank of Example Questions

Are they female?

Are they male?

Does he have brown hair?

Is he a TV personality?

Does she have a ponytail?

Does he have black hair?

Is she an actress?

Is he a character from a book?

Is he wearing glasses?

Is she a musical artist?

Is he a singer?

Is he old?







Celebrity Names (top to bottom)

The Queen/ David Attenborough

Jesy Nelson/ David Walliams

Ariana Grande/ Lady Gaga

Harry Potter/ Rey (Star Wars)

Ozzy Osborne/ Robert Downey Jr.

Dame Judi Dench/ Captain Marvel (Brie Larson)

Prince Harry/ Greta Thunberg

Harry Styles/ Zendaya

James Bond 007 (Daniel Craig) / Superman