THE EXTRAORDINAIRES®
TEACHER’S GUIDE
Anita Murphy, The Creativity Hub

www.extraordinaires.com
What is a Designer?
Designers are the people who design all the things in the world around you. They plan the buildings you live in and invent the objects you use. They sketch the clothing you wear and imagine the games you play. They design chairs to be more comfortable and create tools for specific jobs. They adapt things for people with special needs. They make information easier to understand.

Why the world needs designers
The world is constantly changing. It needs new places, objects and technologies not yet imagined. The future needs people who ask many questions and empathise with others.
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Introduction

This teacher’s guide introduces you to The Extraordinaires Design Studio and more importantly to each of the Extraordinaire characters. It provides a quick reference to each Extraordinaire to help you describe their appearance, their environment and their needs to your students. Also included are a list of useful questions to prompt students to think about the needs of each Extraordinaire. There is also more information about the Object Cards, Think Cards and Award Cards to help you and your students use them.

Who are The Extraordinaires?

Each Extraordinaire is a larger than life character with extraordinary needs. These needs come from their job, e.g. the Soldier, their physical appearance, e.g. the Giant or the environment they live in, e.g. the Merman.

The technique used in developing the characters is called ‘Personas’. Personas are used by design and engineering professionals to empathise with the users of the products they are designing. A persona is a fictitious character, written to represent a group of users of the end product. They are used to help solve design questions in the development cycle.

Each Extraordinaire is a persona of an archetypal character that children will recognise. We have all read books and watched movies about pirates, wizards, fairies, robots and we can easily imagine the worlds they live in.

Each Extraordinaire is also an amplification of human needs. The Pirate has a hook hand - this is like someone with a physical disability or prosthesis. The Vampire Teen has to spend daylight hours indoors - this is like someone living with with a medical condition. The Wizard needs a walking stick and glasses, just like many elderly people. By recognising the needs of the Extraordinaire characters, and inventing products for them, it is our hope that children will recognise when they are problem solving in the real world.

How to use this guide

Use this guide as a reference when playing with The Extraordinaires Design Studio in the classroom. The primary purpose is to give you more information about each Extraordinaire character, describing their appearance, their environment and their needs. The Extraordinaire worlds are not limited to the information on the cards. If you (or one of your students) imagine other aspects of the Fairy’s life, another hobby the Soldier enjoys or what the Wizard likes for breakfast, these too can inform design decisions. There are no wrong answers, once explanations are given.

When introducing an Extraordinaire character to students, ask them to describe what they see on the card. Then ask questions like:

• Why is this character an Extraordinaire?
• What is unique about their physical appearance?
• What is different about the environment they live in?
• Is there something special about their job?

It is these questions that will prompt your students to look closely at the cards and to develop empathy with the characters.
Why we made The Extraordinaires Design Studio

We read the work of educational experts who are working to adapt the education system to better suit the needs of tomorrow’s world. The prevailing view is that in their lifetime, today’s children will have to continuously problem solve and relearn skills. This will be essential to keep up with exponentially changing job roles and technology.

Attending Education conferences since 2010, we have heard talks about the skills that children need to be learning. These include:

- Divergent thinking
- Problem solving
- Multiple outcomes
- Making connections
- Discussion skills
- Presentation skills
- Self-expression
- Evaluation of ideas
- Giving feedback
- Collaborative work
- Empathy

We realised that these were the skills we learned while studying design in Art College. We set out to create a toy that let children explore these skills in a playful way.

We made The Extraordinaires Design Studio to introduce children to the world of invention, design and creative problem solving. To let them role play being a designer. The ‘sandbox’ experience invites children to design wildly imaginative solutions while building empathy for the Extraordinaires characters.

At the Creativity Hub, we publish games and playthings that foster Imagination, Empathy and Self-Esteem. We envisage a world where these attributes are valued and fostered in every individual.

Thank you for using The Extraordinaires Design Studio in your classroom. We hope your students will enjoy inventing chairs for the Evil Genius, music players for the Giant and remote controls for the Ninja. More importantly we hope they discover their ability to stretch their imaginations, to design and problem solve and to understand the needs of other people. We hope too that they will apply this to solving problems in their everyday lives.

Anita Murphy
Inventor of The Extraordinaires Design Studio
Profile:
The Fairy is an Extraordinaire because of her size and magical powers. She inhabits a natural micro world AND she can fly.

The fairy has wings to fly. We see from the magical glow and sparkling lights that surround her that she has magical powers. She is very small; around the size of a dragonfly.

She lives among nature, with the birds, insects and woodland creatures. She can fly from the highest treetops to the grass and flowers of the forest floor.

Her clothes and shoes are made from petals, buds and leaves.

Let’s look at the Fairy’s needs:

She is extremely small, light and delicate:
• She might struggle to lift heavy objects.
• She might need to protect herself from the wind and rain.

She needs to be very fit, so she can fly and run:
• She must take care of her body and eat well.

She lives among nature:
• She must be careful not to harm the woodland environment.
Let’s take a closer look:

We can take a closer look at the Fairy’s world on the back of the card.

The Fairy lives inside a tree trunk. Her furniture is made from natural items found in the forest.

She has a hidden room under the floor. Here she keeps her equipment and works on her detective cases.

Sometimes she has to disguise her appearance to avoid being recognised or camouflage herself to stay hidden.

She uses detective gadgets such as night vision goggles and photofits. These are made out of natural materials, and can be powered by her magic.

Always ask more questions:

Look deeper and imagine the backstory of the Fairy. Here are a few questions to ask:

- What are the advantages of being so small?
- When might her small size be a problem?
- How can she overcome this?
- How does she use her magic?
- What type of Fairy detective cases does she work on?
- Who does she investigate?
- Why did she decide to be a detective?
- How does she protect herself in a storm?
The Pirate is an Extraordinaire because his life is full of travel and adventure. He travels rough seas to paradise islands in search of treasure.

The Pirate is standing on the deck of his Pirate Ship. He wears an eye patch and a tricorn hat. He has a hook hand. A parrot on his shoulder.

A pirate queen reads the treasure map. The ship’s cook is excited by something.

They all live together in a very small space. There is someone in the ship’s hold with the barrels of rum. Is he a pirate friend or an enemy prisoner?

The Pirate explores the seas, searching for treasure and adventure. The weather can be extremely hot but sometimes it can be stormy and dangerous.

Let’s look at the Pirate’s needs:

He has a hook hand:
- He needs to adapt how he does everyday tasks such as eating or lifting objects.

He spends a lot of time on the ocean:
- He and his crew need to have a good supply of food, and clean drinking water.
- He has to be ready for sudden changes of weather. He needs to protect himself in hot and cold temperatures.
- He also must survive powerful waves, strong winds and driving rain.
- The ship is constantly moving so things need to be tied down or stored safely.
Let’s take a closer look:

We can take a closer look at the Pirate’s world on the back of the card.

In stormy weather things may tumble around or blow away if not tied down.

Sometimes the Pirate must navigate the highest of waves and the choppiest of seas.

He is on lookout duty high up in the crow’s nest in a ferocious storm. Even the parrot is worried.

The Pirate’s hook hand makes doing some everyday tasks difficult. Can his hook have different attachments?

On dry land, the Pirate runs an exotic pet shop, selling the tropical fish, birds and reptiles collected on his voyages. This makes him really happy and he enjoys taking care of all the animals.

Always ask more questions:

Look deeper and imagine the backstory of the Pirate. What other questions can you ask?

- What does he find difficult with just one working eye and a hook hand?
- What can he do better than people who don’t have a hook hand?
- What attachments would be useful for his hook hand?
- Where does he get his food and water from?
- How does he protect himself from extreme cold and soaring heat?
- Where does he find the animals for his Pet Shop?
- Where does he find his treasure maps?
- What treasure does he seek?
Profile:

The Superhero is an Extraordinaire because she uses her superpowers and abilities to fight crime. She must always keep her identity secret.

The Superhero is standing on top of a building in a big city with strange buildings. It is night time; the moon is full and the stars are twinkling in the sky.

She is wearing her special Superhero suit with boots, gloves and a cape. She has a Superhero gadget attached to her wrist and she is carrying a special rope. She wears an eye mask to conceal her real identity.

On the right of the building is a cyber-bug crawling upwards towards the Superhero.

Let’s look at the Superhero’s needs:

She must keep her SuperHero identity hidden:
- She must wear a mask and costume when fighting crime.
- She must also protect her identity online.
- She may feel lonely if she has to keep secrets from friends.

She works in dangerous places, such as on top of high buildings:
- She must be very strong and fit to do her job.
- She must eat healthy food and exercise often.
- She uses gadgets and technology to enhance her superpowers.
Let’s take a closer look:

We can take a closer look at the Superhero’s world on the back of the card.

She can design using highly advanced technology.

What features are on the Superhero’s wrist gadget?

She has superpower eyes that beam out bright lasers. These are useful for making and fixing high tech gadgets.

The Superhero has a top secret, underground base beneath the subway. Here she makes gadgets to enhance her superpowers.

She works in an office, in front of a computer. There are notes and diagrams on the wall, around her desk.

She works as a website or software designer. What else could she use her technical genius for?

By day, the Superhero looks like a regular woman. She wears glasses and a plain t-shirt.

Always ask more questions:

Look deeper and imagine the backstory of the Super Hero. What other questions can you ask?

- What are her superpowers and how did she get them?
- What materials are her Superhero clothes made from? What does the cape do?
- What sorts of danger does she face? What villains must she battle?
- What does she do to have fun?
- What advantages are her superpowers in everyday life?
- How does she keep her secret identity from her friends and enemies?
- What else does the superhero keep in her base?
Profile:

The Soldier is an Extraordinaire because of his strength and bravery. He defends civilians in dangerous conditions.

The Soldier is in a street in a town where a war is being fought. He is running away from a big explosion behind him. He is wearing an army uniform, body armour and a protective helmet. He is speaking into a walky-talky, warning others to stay away.

In the background there are two soldiers (one male, one female) from the same army unit. They are sheltering from the explosion behind a wall. We can see things that have been destroyed during the fighting, such as a car, a shoe and building parts.

Let’s look at the Soldier’s needs:

**He can be stationed in different environments. It may be hot during the day and cold at night:**
- He needs to make sure he has clean drinking water.
- He must be able to adapt to his new environment.
- He must use the clothing and equipment assigned to him by the army.

**He has to live and work as part of a unit with many other soldiers:**
- He does not get much privacy, and can’t move around freely.
- He and his team mates form strong bonds and become like family to each other.
- He cannot have many personal items from home.
Let’s take a closer look:

We can take a closer look at the Soldier’s world on the back of the card.

The Soldiers all live together in their unit’s camp. There is not much privacy or time alone.

The Soldiers enjoy playing games and football to pass the time between missions.

One of the soldier’s hobbies is photography. He enjoys taking photographs of the wildlife around the camp.

Each meal is rationed and the cook must use issued ingredients to feed all the soldiers.

The camp can be noisy with loud helicopters taking off and landing during the day and night.

The Soldier must stay strong and fit. He must be able to run quickly while wearing heavy body armour.

They like to connect to their families at home while they are away.

The Soldier lives and works in an extremely dangerous environment. He must be ready for enemy attacks at all times and know how to protect himself.

Always ask more questions:

Look deeper and imagine the backstory of the Soldier. What other questions can you ask?

- What places does the Soldier get stationed in?
- What dangers does he face?
- What does he need to wear?
- Where does he sleep?
- Why do you think he likes to photograph wildlife?
- How did his interest in photography start?
- What does he miss most about home?
- Can you design things that can be mass produced and issued to all soldiers?
The Evil Genius is an Extraordinaire because of his brilliant mind. The sky is the limit for his crazy plans. No invention is too big or too outrageous.

The Evil Genius is in his hidden island lair. He is standing in front of a virtual screen, looking at his latest Evil plan - number 621.

He is a short man, with tiny feet. He dresses smartly in a top hat, suit and bow tie. A cyber-bug robot awaits his instruction, eyed suspiciously by a pet cat.

Through one of the windows we can see an enemy being dangled over a pool with sharks in it. Through another window we can see an active volcano.

Let’s look at the Evil Genius’s needs:

**He chooses to live alone in a remote lair, with cats rather than people:**
- He thinks cats are easier to understand (and live with) than people are.
- He finds it difficult to empathise with other peoples feelings.
- He must be able to care for his cats.

**He is a scientific Genius:**
- He can build amazing technological weapons and gadgets, the bigger and more complex the better.

**He has a need for his power and brilliance to be recognised:**
- He believes power and material possessions are important.
- He needs to impress people with his inventions and gadgets.
- Less is NOT more, bigger IS better. He will spare no expense on his evil inventions.
- He doesn’t care about health-regulations or eco-friendliness.
Let’s take a closer look:

We can take a closer look at the Evil Genius’ world on the back of the card.

The Evil Genius has built a huge rocket-shaped weapon.

He builds all of his cyber-bug robots in his lab and programmes them to carry out his evil deeds.

He likes to relax by sitting in an armchair in front of a flat screen video fire with all of his cats.

He has a framed ‘Patent denied’ certificate. His brilliant invention, the Uber-Net™ never came to be. He has vowed revenge and plans to destroy the whole internet.

One of his gadgets is a touch screen device displaying the words ‘Slide to destroy’.

Always ask more questions:

Look deeper and imagine the backstory of the Evil Genius. What other questions can you ask?

- Who are his enemies? How does he plot to destroy them?
- What jobs do the cyber-bug robots carry out for him?
- What was the Evil Genius like as a little boy?
- What will his next evil plan be?
- What other ways does he like to relax and play with his cats?
- What does the Evil Genius like to eat? What is his favourite food?
The Spaceman is an Extraordinaire because he pushes the limits of human experience. He travels through space, exploring planets to advance human knowledge.

The Spaceman is standing on the surface of a planet. He is wearing a bulky spacesuit and helmet. The suit holds gadgets such as a mounted camera, a light and a communicator. He uses special breathing equipment. He carries a pick up claw and sample jar to collect rock samples.

Behind the Spaceman is a landing shuttle, a satellite transmitter and scientific bio-domes. Among the stars, there are two moons in the sky.

Let’s look at the Spaceman’s needs:

**He spends long periods of time alone:**
- He spends time watching the incredible views from space.
- He can get lonely as he is away from his loved ones.
- He has to live with zero gravity.

**His job is very exciting, but extremely dangerous:**
- Safety is very important - he must have backup plans if his equipment breaks down.
- He has spent long hours training both his mind and body back on earth.
Let’s take a closer look:

We can take a closer look at the Spaceman’s world on the back of the card.

On the wall is a photograph of the Spaceman’s son and pet dog.

His pen is floating because of the lack of gravity. He must secure his belongings to stop them drifting away.

The technology on the Spaceman’s suit allows him to survive while working outside.

The Spaceman lives and works in a small, confined space.

He is wearing a headset so he can communicate with Ground Control.

When back on earth, he can really appreciate the simple things in life.

Always ask more questions:

Look deeper and imagine the backstory of the Spaceman. What other questions can you ask?

- What is his mission, what important work is he doing in space?
- What dangers does he face? What does he do when things go wrong?
- How is being in space different from being on the Earth?
- How does he keep in touch with his family while he is in space?
- How does he spend ‘downtime’ in space?
- What does he miss about space when back on earth?
- What do you think he eats in space?
Profile:

The Wizard is an Extraordinaire because of the wisdom of his 800 years. He is a master of spell casting, potion making and harnessing the elements.

The Wizard is a very old man, about 800 years of age. He has a long white beard which almost touches the ground. He wears a purple robe, a wizard’s hat and pointed shoes, all with magic symbols on the fabric. He needs to wear thick eye glasses and use a walking stick (which is made from a very old, twisted piece of wood).

He is standing in his study, filled with books about quantum physics, scientific experiments and magic spells. One of his books is on a special bookstand, lit by a tall candle. There is also an ornate chalkboard, on which the Wizard writes spells and equations.

Let’s look at the Wizard’s needs:

**He is 800 years old and his body is frail:**
- He can’t move around as quickly as when he was young. He needs his walking stick for support.
- He wears thick glasses to see small things and to read small print in books.
- Sometimes he worries that people will see him as a burden because of his age.

**He is a person ‘out of time’ (from an older generation):**
- His old fashioned equipment and clothing seem strange in a modern world.
- He has a lot of knowledge and wisdom and can make connections between past, present and future.

**Even though he is old, his mind is active:**
- He is very curious about the world. He is keen to experiment and try new things.
- New technology and inventions could help him.
Let’s take a closer look:

We can take a closer look at the Wizard’s world on the back of the card.

His enchanted walking stick protects him on rough ground.

He switches his wizard’s hat to a baseball cap to be part of the team and fit in with the rest of the film crew.

The Wizard also has a modern career as a special effects artist on movie sets. He creates controlled explosions and lightning flashes to wow audiences.

The Wizard seeks out rare ingredients for his magic potions. The remote Moon Orchid must be picked during a full moon.

Magic potion-making is an exact science. The ingredients, timing and temperature must be perfect.

Always ask more questions:

Look deeper and imagine the backstory of the Wizard. What other questions can you ask?

- What tasks might he find more difficult than a younger person would?
- What potions and spells does he make?
- How could modern gadgets and technology help him?
- What other modern day jobs could he have?
- Combining his knowledge and wisdom with his experimenting and curiosity, what world problems could he solve?
**Profile:**

The Ninja is an Extraordinaire because his martial art skills make him both silent and deadly.

The Ninja stands in a martial art pose in a secret training room or ‘dojo’. He wears a black balaclava and dark clothes that are easy to move about in. He has a distinctive red band tied around his balaclava, and carries weapons on his back.

Dangling from a hole in the ceiling is a rope on a hook. There are silhouettes of people behind the screen walls of the dojo. In the room there are old Japanese antiques like a large precious vase and an ancient sword. A security camera is also visible.

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**Let’s look at the Ninja’s needs:**

**When working as a ninja, he must be hidden and totally silent:**
- He must be able to move silently. Any gadgets or equipment he uses must make no noise.
- His equipment must be easy to carry and hide.
- His clothing needs to be dark and comfortable to move about in.

**His work is top secret:**
- He spends a lot of time alone, waiting around in strange places, trying to keep out of sight.
- He can’t tell friends what he does - they must wonder where he disappears to.

**He needs to stay fit, healthy and agile:**
- He must keep his body and mind in peak condition by training in martial arts practice every day.
- He must eat healthy food and get enough sleep.
Let’s take a closer look:

We can take a closer look at the Ninja’s world on the back of the card.

His weapons and gadgets are kept in a rolled up carrier. This needs to be hidden.

All tools must be all very precisely made for Ninja tasks. They must be lightweight and silent.

When the Ninja is not working, he is a drummer in a Japanese rock band. He still wears his red headband.

Playing drums is very noisy, unlike his work as a ninja.

As a drummer, he must use both arms and legs at the same time and be very nimble. His martial arts training is useful for this too.

The Ninja has to hide in strange places, in all weather.

This requires great inner-strength. He must stay completely silent and still.

Always ask more questions:

Look deeper and imagine the backstory of the Ninja. What other questions can you ask?

- What are his Ninja secret assignments?
- What are his Ninja moves? How does he practise?
- In what other places must he stay silent and hidden?
- What equipment does he need?
- What sort of music does he play with his band?
- Where does he practise his drums?
- What was the Ninja like as a little boy?
Profile:

The Giant is an Extraordinaire because of her immense size and big heart. She sees the world differently from her great height.

The Giant is extremely tall. She wears a circus tent as a dress, a ship’s anchor as a necklace and huge wooden clogs on her feet. She is standing beside a snowy mountain where people are skiing and tobogganing.

She is very friendly and uses her size to help people. She lifts children to the top of the ski slope by carrying them carefully in her hands.

The Giant is so tall that birds fly around her and like to perch on her shoulders.

Her size startles some of the people.

Let’s look at the Giant’s needs:

She is extremely tall with very long arms and legs:
- Objects from our world appear tiny to her.
- She uses large human objects as everyday items (extreme ‘upcycling’).
- She has to have clothes and shoes specially made for her.
- Her large hands and fingers make it harder for her to do detailed tasks (fine motor skills).

The Giant’s height and strength may be a danger to people:
- She must be careful not to drop anything.
- She must be aware of what is below her when she is walking.
- She must be careful of flying objects.

She is very friendly:
- Her size can be a great help to human-sized people.
- People can help her make and find the things she needs.
Let’s take a closer look:

We can take a closer look at the Giant’s world on the back of the card.

This Giant lives in a huge cave.

She wears slippers made from boats.

She has a pet elk.

She works at a power station, blowing wind turbines on still days.

She furnishes her cave with objects from the world of human-sized people.

She likes to make things in inventive ways.

Always ask more questions:

Look deeper and imagine the backstory of the Giant.
What other questions can you ask?

• What other objects from the human world would be useful to the Giant, and how might she use them?
• How could the animals in the mountains help her?
• How can the Giant and the human-sized people have fun together?
• How can the power company pay the giant, how else can they work together?
• What other jobs would her size be useful for?
Profile:

The Vampire Teen is an Extraordinaire because of his nocturnal strength and eternal youth.

The Vampire Teen is running through city concrete structures at night time. His large fangs and red eyes glow in the moonlight. He is dressed like an ordinary teenager with a black and red striped top, purple skinny jeans and trendy trainers.

He is with two vampire friends as they run and parkour jump from bridges. They are very strong and athletic by night. This is their time, their city, their playground.

Let’s look at the Vampire Teen’s needs:

He must stay inside during the day:
- He can feel trapped and bored.
- He must be very careful to protect his skin from the sun light.

His ‘different’ appearance makes life difficult at school:
- He finds it difficult to fit in and like many teenagers can feel alone and misunderstood.
- He finds it hard to make human friends.
- He wishes they could see him when he is strong and powerful at night.
Let’s take a closer look:

We can take a closer look at the Vampire Teen’s world on the back of the card.

The Vampire Teen goes to school like other teenagers.

As a vampire, he needs to drink blood to stay strong.

He has found a way to use a blood bag on a drip in his bedroom.

During day time, he has to close the blinds to stop the sunlight shining on him.

The other students stare and point at him. He doesn’t fit in very well.

He uses the internet to check things like what time sunrise and sunset will be.

The Vampire Teen has to stay indoors during the day, he passes the time playing computer games.

Always ask more questions:

Look deeper and imagine the backstory of the Vampire Teen. What other questions can you ask?

- How did he end up as a vampire, living as a modern teenager?
- How can he have more freedom during the day? In what new ways could he protect himself from the sun?
- What ways could he spend more time with other teenagers?
- What other activities could he do at night time?
- How can he make sure he has enough blood to drink?
- How can he remember when the sun rises and sets?
Profile:

The Tribal Child is an Extraordinaire because she is part of an undiscovered tribe, living without modern technology. Her life is guided by nature, magical spirits and ancient traditions.

The Tribal Child is wearing a grass skirt and top and has red marks painted on her face. She is holding a bow and arrow and is learning how to hunt with it. An adult from the tribe is standing behind her, guiding her aim. A baby sits in front, playing with a carved wooden toy. We see huts in the background. Two other members of the tribe are sitting on the ground grinding grain by hand.

There is no electricity or running water. The tribe uses natural materials such as animal skins, wood, grass and stones to make their clothes, tools, weapons and huts. Amazonian birds and insects are flying around.

Let’s look at the Tribal Child’s needs:

**The Tribal Child and her tribe have no contact with humans in the rest of the world:**
- They don’t know about modern technology
- They are in real danger from logging in the rainforest.
- Contact with other people could destroy their way of life.
- Anything designed for the Tribal Child must respect and fit with her tribal ways.
- They have knowledge about nature and healing which we don’t.

**They have no access to technology, electricity or running water:**
- They must use heat from the fire and carry their own water.
- They make what they need from materials they can find in the rainforest.

**They believe in superstition and magic:**
- They use more than science to explanation how nature works.
- Elders pass on knowledge through stories.
- They use totems and amulets for protection.
Let’s take a closer look:

We can take a closer look at the Tribal Child’s world on the back of the card.

The community sits together around a camp fire at night time.

Tribal elders tell stories of magical creatures and great hunting expeditions.

The forest behind the tribal huts is dark, shadowy and dangerous at night.

There is a strange, loud metal creature (or airplane) in the sky. The tribe have never seen anything like it before.

The flames are tall and shoot sparks high into the air, warding off animals and evil spirits.

Totems are very important to the tribe. They protect them from danger and evil spirits.

They are frightened and try to shoot the airplane down with bows and arrows.

The Tribal Child covers her ears and hides from the loud engine noise.

Always ask more questions:

Look deeper and imagine the backstory of the Tribal Child. What other questions can you ask?

- What would it be like to live without electricity or modern technology?
- What are the people and things that are important to her?
- What does she like to eat and drink?
- What dangers does she face?
- What does she like to play with, what games does she play?
- What type of stories do the elders tell?
- What scares her?
The Robot is an Extraordinaire because of its data driven senses, computerised brain and absence of emotion.

The Robot is made of metal and plastic and moves around on wheels. It is moving around the large warehouse in which it works. Its ‘eyes’ can scan barcodes. On its chest is a computer display screen. It can raise itself up and down to different heights.

The Robot can move freely on wheels, on one level (it cannot use stairs). In the background, we see other sections of the warehouse with more robots at work, moving boxes. There are also two human workers (truck drivers), checking the boxes that are loaded into the trucks.

Let’s look at the Robot’s needs:

**The Robot does not think like a human:**
- It needs to be programmed and given very clear tasks to do.
- It can break down things like yo-yoing into binary data and physics equations.
- It does not react emotionally to things.
- It needs power and must recharge regularly.

**It has to move using wheels:**
- Using stairs would be a problem, so alternative ways of moving between levels are needed.
- Surfaces must be kept flat and obstruction free.

**The Robot has a secret hobby:**
- It has learned to break the rules and sneak out of its pod at night.
- It has learned to play with a yo-yo using physics data.
- It uses digital emoticons to simulate human emotions.
- Perhaps it is slowly learning emotions through a passion for yo-yoing.
Let’s take a closer look:

We can take a closer look at the Robot’s world on the back of the card.

A human security guard keeps watch over the pods.

The robot shrinks to its smallest size to squeeze inside the tiny space.

The Robot has a secret hobby - Yo-yoing.

The Robot does not see through human eyes. It can read data and information from the internet. It can sense heat and movement.

The Robot must charge its batteries in a pod at night.

There are many re-charging pods in the warehouse.

The Robot can show emotion while practising yo-yoing using digital emoticons.

It sneaks outside the recharging pods to do its tricks when the security guard is gone.

Always ask more questions:

Look deeper and imagine the backstory of the Robot. What other questions can you ask?

- Who made the robot and why?
- What can the robot do better than a human?
- What other jobs could the Robot do?
- What other hobbies would the Robot enjoy?
- How could it overcome the challenges of having to travel on wheels?
- How else could the robot be recharged?
Profile:

The Circus Acrobat is an Extraordinaire because of her flexible body and nomadic lifestyle. She travels from town-to-town performing death-defying aerial acts to delight audiences.

The Circus Acrobat is high up in a circus tent, hanging upside down on a trapeze. She is wearing bright, colourful, sparkly clothes. The Circus Acrobat is very flexible and strong. She can bend and lift her body into many different shapes.

There are other circus performers in the circus ring below. Some are performing acrobatics, others are juggling with fire. The Big Top is full of people and the circus show is in full swing.

Let’s look at the Circus Acrobat’s needs:

She spends her life traveling from place to place:
- Things must be portable and easy to take with her.
- Everything must be stored in a very small space.
- Things must be practical.
- The few possessions she keeps are precious to her.

She performs for a living:
- She is confident in front of large audiences.
- She is very strong and flexible (She can use her feet to do tasks as well as her hands).
- She loves the thrill of performing to a surprised and delighted audience.
Let’s take a closer look:

We can take a closer look at the Circus Acrobat’s world on the back of the card.

There is very little space in her caravan, and everything must be stored neatly.

Some of the things she values are: a framed photograph of her circus family, a locket with a photograph of a woman inside it and an old doll.

The Circus Acrobat is also the mechanic of the circus troop.

On the wall is a picture of the circus trucks.

She is fixing the engine of a circus truck while upsidedown.

Always ask more questions:

Look deeper and imagine the backstory of the Circus Acrobat. What other questions can you ask?

• How is moving from town to town different from staying in the same place?
• What would it be like to live in such a small space?
• Why did she join the circus?
• Where does the circus travel to?
• What training does she do to keep her body strong and flexible?
• Who are her family and friends?
• How does she feel when in the spotlight?
The Merman is an Extraordinaire because of his fishy physique and the dark depths of this underwater world.

The Merman is swimming underwater, deep down on the seabed. He has silver-blonde hair, a muscular body and his bottom half is a fish tail. He has yellow tattoo markings on his arms and back. His body has fins and gills so he can swim and breathe underwater. He is collecting seaweed from the seabed, while colourful fish swim all around.

In the background we see underwater homes carved out of the bedrock. There are underwater geysers and thermal currents that could act as power sources for the Mermen.

Let’s look at the Merman’s needs:

**He lives underwater:**
- There is no electrical power as we know it, things need to be powered from different sources (geysers, gasses, phosphorescence).
- There is salt and natural sea minerals in the water, this may corrode materials from our world.

**He is part fish/part man:**
- If he needed to come up to land, he would need specialist equipment to move and breathe.
- He is a powerful swimmer and enjoys different types of water-sports.
Let’s take a closer look:

We can take a closer look at the Merman’s world on the back of the card.

Power is sourced from underwater thermal currents and geysers.

Phosphorescence is used for lighting.

There are aerated tanks with animals from our world (the opposite to aquariums)

The Merman works as a chef in an underwater restaurant.

They are using a large sea urchin as a ball.

The Merman is playing a team game with his friends.

Power is sourced from underwater thermal currents and geysers.

The Merman is preparing food for his friends.

They use fishbones as utensils.

Always ask more questions:

Look deeper and imagine the backstory of the Merman. What other questions can you ask?

• How is living underwater different from living on the land?
• How would life be different if you had a fish tail instead of legs?
• What food might be served in an underwater restaurant?
• How does the Merman harness power and light?
• What is his home like?
Profile:

The Rap Star is an Extraordinaire because of his ambition and drive. He used his musical talent (and hard work) to achieve huge fame and fortune. He shows this off through his lifestyle and ‘bling’.

The famous Rap Star is standing on a red carpet at a VIP press event. He is wearing a baseball cap, sunglasses, a vest top, baggy jeans and expensive trainers. He wears lots of ‘bling’ - a gold ring, a diamond ear ring and a star-shaped gold medallion with a dollar sign on the front. He has two friends as an entourage. The Rap Star is being interviewed by people holding microphones, he makes coded hand gestures to the cameras.

Let’s look at the Rap Star’s needs:

The Rapstar is very successful and rich:
- He is a great artist, his music speaks to a lot of people.
- He wants to be seen as important, and to feel respected.
- He wants other people to see that he is rich.
- Anything designed for the Rap Star should look expensive and eye catching.

The Rap Star’s grandmother is a big part of his life:
- He buys her things and takes her out on trips.
- Perhaps she raised him without much money and now he feels responsible for looking after her.
- Perhaps visiting her home reminds him where he comes from and how his music started.
There are gold disks on the wall. He is very successful and has sold many records and downloads.

The Rap Star visits his grandmother regularly. This is the area where he grew up. He brings her flowers and picks her up in a white limousine.

The Rap Star likes to show his success through his gold jewellery, encrusted with diamonds. He also has a gold tooth.

It is 4.30am. He works very hard on his music.

The sound engineer has fallen asleep, they have been working for so long.

He is in a studio, recording into a microphone.

The Rap Star visits his grandmother regularly. This is the area where he grew up.

He brings her flowers and picks her up in a white limousine.

Let’s take a closer look:

We can take a closer look at the Rap Star’s world on the back of the card.

Always ask more questions:

Look deeper and imagine the backstory of the Rap Star. What other questions can you ask?

- How does he like to spend his money?
- What events does he go to and how does he spend his free time?
- How does fame affect his life?
- What does he write his music about?
- How does he like to spend time with his grandmother?
- Where did he grow up and where does he live now?
**Extraordinaire Cards**

In the Deluxe set of the Extraordinaires Design Studio, there are 15 x double-sided Extraordinaire cards. Each is a visual profile of one of the Extraordinaires; it shows what they look like, the lifestyle they lead and the world they live in. Each Extraordinaire lives in a unique environment. Some have different physical needs, some have unusual jobs or hobbies. Take a closer look to spot the clues.

**The Extraordinaires:**
- Fairy
- Pirate
- Superhero
- Soldier
- Evil Genius
- Spaceman
- Wizard
- Ninja
- Giant
- Vampire Teen
- Tribal Child
- Robot
- Circus Acrobat
- Merman
- Rapstar

**Object Cards**

The Object Cards tell you what you have to design for the Extraordinaire. Mixing the 15 Object Cards and the 15 Extraordinaire Cards is what adds the random element to the game. Together they create 225 design challenges.

Each Object Card displays an everyday item, e.g. ‘A Music Player’, ‘Something to Wear’ or ‘A Drinks Carrier.’ Each Object Card also offers doodles to provide inspiration. These doodles show examples of these objects from our world. They encourage the students to thinks laterally, to look at scale, traditional solutions, examples from nature and different cultures as well as old and new technology. Here are two examples:
Think Cards

All good designers ask questions. The Think Cards will help students ask questions designing. There are three types of questions: Research, Design and Improve. Students can choose to answer as many as they like.

Research
The Research Cards prompt students to take a closer look at the Extraordinaire and their world. Looking closer will spark ideas if the student is unsure where to start. E.g.

‘Here or there’
Where and when might the Extraordinaire use this kind of object?
What else might they be doing?

Design
The Design Cards introduce different aspects of design like materials, shape and colour. E.g.

‘Put it away’
How will your design be stored when not in use?

Improve
The Improve Cards push students to think again and make their designs even better. E.g.

‘Perfect fit’
How can you make the size or shape of the design a better fit for the Extraordinaire?
Award Cards

Use the Award Cards after the students have presented their designs to the group. This rounds off the experience and enables students to give feedback. Remember, the award goes to the design not the person who designed - it is not personal. Encourage the students to say why they are presenting the award. Each award card is for a different element of the design process.

**The Most Wildly Inventive Design:**
This awards the student (or group) who has really stretched their imagination.

**The Best Presentation:**
This awards the student who has really sold the product to the audience (whether or not the design is good).

**The Best Single Feature:**
This awards the student who has a really good gem of an idea hidden in an average design.

**Best Piece Of Research:**
This awards the student who has answered many research questions, has really thought about the world of the Extraordinaire and has explained why the design is needed.

**Most Useful Design:**
This card awards the student who has really empathised with the Extraordinaire. The design is practical and fits their needs perfectly.

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Store and share via The Extraordinaires App

Download the free Extraordinaires app from from the App Store (Apple) or Google Play store (Android) to your phone or tablet. Register to keep all your class designs in the one place, upload to www.extraordinaires.com or share via your school’s social media.

Through the app, take a photo of each design completed in class. Ask the students to tag it and title it. The students then explain the design using either 400 characters of text or 60 seconds of audio. By saving the designs to your gallery, you can keep track of all the work completed in your classroom. You can also share them with others. With your permission, we would also like to feature some of these designs on our website.
THE EXTRAORDINAIRES® DESIGN STUDIO

INVENTIONS
36 Design Challenges
Features: Fairy | Ninja | Pirate | Spaceman | Superhero | Wizard

BUILDINGS
36 Design Challenges
Features: Robot | Evil Genius | Giant | Mermaid | Knight | Future Child

DELUXE SET
225 Design Challenges
Features 15 Extraordinaires including: Circus Acrobat | Merman | Rap Star | Solider

Be an Inventor!

Be an Architect!

For the Ultimate Designer

Available at all good toy stockists. See www.extraordinaires.com.