

Potential  
Plus  
UK



Discover.  
Nurture.  
Succeed.

Charity Number: 313182

It's alright  
to be

**Bright!**

17-24 October 2015

**WHAT'S OUT THERE?**



It's alright to be bright  
it's cool to be clever  
we've all got potential  
let's celebrate together!

# It's Alright to be Bright!

17-24 October 2015

## Welcome!

Join us to celebrate It's Alright to be Bright! 2015 on the topic of What's Out There? In our tenth year of the It's Alright to be Bright! campaign, we are searching for things that are not in normal view. Our activity booklet is for you to use in your class, year, club, group or family.

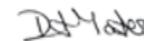
The aim of the campaign is to celebrate the many gifts and talents of children everywhere; we hope to honour their diverse passions, ambitions and successes. Children are capable of extraordinary achievement in many different areas and we remember them all, no matter where their talents lie: mathematics, languages, science, writing, art, drama, music, chess, sports...in almost anything!

We also recognise and wish to raise awareness of the children who are misunderstood, feel isolated and who struggle to get their needs met because they are different to most. These children often learn in unusual ways, have an atypical understanding of the world and suffer with asynchronous development in a number of ways. These differences can impact on their social lives, their emotional experiences and their behaviour.

We hope that you will find something in this activity booklet that will inspire you to run an activity. We have covered all ages and abilities, encouraging everyone to learn something new, develop their skills and exercise their thinking. If you have found it useful, please let others know about it.

Potential Plus UK is an organisation that supports children with high learning potential. We offer family membership, school membership and professional membership so that we can support these groups. We also carry out assessments on children and provide recommendations and support to families and schools. We deliver workshops in schools for teachers, governors and parents. If you would like to find out more about our work, please visit [www.potentialplusuk.org](http://www.potentialplusuk.org).

We hope you enjoy the activities in the booklet. Let us know how you get on!



Denise Yates

Chief Executive, Potential Plus UK



## About Potential Plus UK

Potential Plus UK (the operating name of The National Association for Gifted Children) is a charity that supports the social, emotional and learning needs of children with **high learning potential\*** of all ages and backgrounds.

This includes children who have been identified as Academically More Able within the school setting who have the potential to achieve in a wide range of academic subjects, the arts or leadership, those who are Dual and Multiple Exceptional (high ability coupled with a disability or learning difficulty) and the profoundly gifted.

Our aim is to enable every child with **high learning potential** to grow in confidence, thrive and achieve fulfilment.

Established in 1967, we provide parents, carers and professionals with the confidence and tools they need to help these children thrive. We give them support and specialist advice covering a wide range of issues such as lack of self esteem, underachievement or challenging behaviour.

In addition, we provide opportunities for fun, friendship and challenge outside the classroom.

Most importantly, we celebrate the achievements and potential of these amazing children.

*\*This is the term preferred by Potential Plus UK*

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## Learning Outcomes

- \* To develop speaking and listening skills through discussion about ideas
- \* To explore creativity by using a stimulus to inspire original thought
- \* To develop fine motor skills through drawing, painting, printing and assembling
- \* To develop higher order thinking skills through application of knowledge and evaluation of ideas

## About the Activity

This activity is designed to initiate some open-ended creative (and hopefully slightly wacky) thought about life on other planets, based on a simple and logical starting structure. By giving the creative work a logical initial structure it should be more accessible to children who find imaginative and 'pretend' tasks challenging. Drawing on existing scientific/geographical knowledge children will be encouraged to communicate their ideas both verbally and visually.

Click here for the Alien Life Data Collection sheet to print out:

<http://www.itsalrighttobebright.com/Alien%20Life%20Data%20Collection%20Sheet.pdf>

# LIFE ON PLANET X

## KEY STAGE

KS1

## TIME

1-2 hours (depending on the follow up activities chosen)

## SUBJECT AREAS

English, Geography, Art, Design and Technology

## RESOURCES

Flip chart pad and pens; Blu tack; assorted art materials – paint, pens, pastels, sugar paper, collage materials, scrap (whatever you have really); construction toy such as Lego

## EXTENSION RESOURCES

Copies of the alien life writing frame; some of the suggested extension tasks will require additional materials. Access to computers/internet for research may be desirable.

## H&S

If using tools such as scissors, glue guns etc then appropriate safety precautions should be taken.

# LIFE ON PLANET X

WHAT'S  
OUT  
THERE?

## Suggested Plan

1. Ask the whole group for facts that the children already know about planet Earth. These can be anything from simple ideas like 'grass is green' to more complex suggestions such as 'rain is part of the water cycle'.

2. State that changing any one of these facts could make Planet Earth a very different place. We are going to imagine another planet where the opposite of some of these things is true. Choose one of the facts given before and ask the children to suggest what the opposite of that might be. Allow a little flexibility in the definition of 'opposite' [e.g. the opposite of trees as we know them could be ones that grow upside down]. Expand on the idea and by questioning promote a discussion as to what implications this change could have for life on the planet. [E.g. upside down trees would have roots which spread across the sky and might make the planet surface darker. This could lead to people needing lights on all the time, or animals developing the ability to see in the dark much better] Repeat with up to 5 facts - linking each one to the previous ideas - until you have a fairly detailed descriptive picture of the new Planet.

3. Practical activities which could follow on from this input:
  - a. Encourage the children to paint/draw a picture or create a collage of any aspect of the Planet that appeals to them. Alternatively, use construction toys, clay or junk modeling to create 3D models of some of the buildings/artifacts on this planet.
  - b. Use a simple writing frame to encourage descriptive writing - Our Planet is... On the planet are...etc.
  - c. You may like to start a class project to create a large 3D map/panorama of the planet using papier-mâché. Add details of plant life, buildings etc by using pictures, collage, junk modeling or construction toys such as Lego.
  - d. Planet X documentary. Script and film a David Attenborough style natural history documentary about life on the planet. Act out scenes to dramatise.
  - e. Write a story or cartoon strip about a visit to this planet.

# LIFE ON PLANET X

## SEN Activity Ideas

Provide children with pictures of planets seen from space and a circle of paper or a foam/card sphere that they can colour in and stick collage materials onto. Alien plants can be created very simply by adding a range of craft materials to bare branches/sticks. Also provide assistance for children who struggle with cutting and glueing materials. Consider alternative ways of recording ideas to suit individual children.

## SEN Discussion

By giving the creative work a logical initial structure it should be more accessible to children who find imaginative and 'pretend' tasks challenging. Be prepared to explain that, where a true 'opposite' is difficult to define exactly, that you might have to accept an idea which is just 'very different' from the situation on Earth. [Children with autistic spectrum disorders might have a struggle with this.] Focus on just one or two 'opposite' ideas to discuss in more detail and create a mind map of these as a small group

## High Potential Learner Activity Ideas

Use the alien life forms writing frame (on page 4 ) to help create a more detailed 'natural history' of the Planet. Interview an alien - what do they find most surprising/

shocking about life on Earth? What adaptations did they have to make to live here? Create alien music/language/writing. What are the weather systems like? Each planetary exploration is likely to raise unique topics which could be expanded upon and followed up.

## High Potential Learner Discussion

Plan an expedition from Earth to this planet. What resources would you need? Can you work out how much you would need in terms of supplies? What personnel should you take with you? Can you design a suitable vehicle to transport you there?

## Positive, Negative, Interesting

What changes would you need to make to the way you live to survive on this planet?

## Weird & Wacky!

Imagine you went to the supermarket on this planet - what might you buy there?

## Useful Resources

### Clips of videos on space, the Earth and the Solar System

<http://www.bbc.co.uk/education/topics/zdrrd2p/resources/1>

### A range of downloadable resources to support this topic idea

<http://www.sparklebox.co.uk/topic/fantasy/space.html#VgmPlpdLbbe>

### Space themed A4 word mat for KS1

<http://displays.tpet.co.uk/?topic=Space#/ViewResource/id793>

Any favourite books about aliens or space can be used to support this topic but a few suggestions are:

**Aliens love underpants**  
Clare Freedman and Ben Cort

**Here come the aliens**  
Colin Mc Naughton

**Dr Xargles book of Earthlets**  
Jeanne Willis and Tony Ross

**Q Pootle 5**  
Nick Butterworth

# CRYPTOZOLOGY

**KEY STAGE**

**KS2**

**TIME**

**2-3 hours**

**SUBJECT AREAS**

**English, Geography and Science**

**RESOURCES**

**Suggested photos printed or show on whiteboard, internet access, pens, pencils, coloured pen, paper and card.**

**EXTENSION RESOURCES**

**Relevant books, photography equipment.**

**H&S**

**Internet safety precautions, safe handling of photography equipment.**

## Learning Outcomes

- \* To develop speaking and listening skills through discussion about ideas
- \* To explore creativity by using a stimulus to inspire original thought
- \* To develop higher order thinking skills through application of knowledge and evaluation of ideas
- \* To develop presentation skills through the opportunity to present ideas

## About the Activity

Cryptozoology is the study of 'hidden animals' - animals whose existence has not yet been scientifically recognised. These animals are known as 'cryptids' and are often the subject of stories, deemed to be myths or hoaxes by established scientists. You may know of some of the stories already - the Loch Ness Monster, the Yeti, and Bigfoot. Are these just elaborate jokes?

Perhaps not as some cryptids go on to be officially recognised. In the early 18th century, stories told of creatures that stood upright like men but had heads like deer and hopped like frogs. Sometimes they were spotted with two heads - one on the shoulders, and another on the stomach. People didn't believe a word! By the end of the 18th century, however, this cryptid had been identified as a kangaroo!

So maybe there really is such a thing as a yeti or a loch ness monster.

In fact, it is likely that there is undiscovered life on Earth. Humans have identified around 1.2 million species of living organisms already but a study published in 2011 estimated that there are another 6.8 million animals, 567,000 fungi and 90,000 plants awaiting discovery. It suggests that 86% of the species on land, and 91% in the ocean, are still to be identified.

What might yet be found lurking in the oceans, hiding in the mountains, or creeping right beneath our feet?

[How Many Species Are There on Earth and in the Oceans? Department of Biology, Dalhousie University, Canada. Published: August 23, 2011]

# CRYPTOZOLOGY

## Suggested Plan

1. Show a 'photo' of the Loch Ness Monster [The Surgeon's Photo is the most iconic photograph of Nessie and is easily found on the Internet]. Tell the story told by the 'photographer'. Ask the pupils if they think this is a believable story. Can the existence of this creature be disproved?

2. Talk to the children about what cryptozoology is. Introduce other well known cryptids such as the yeti and Bigfoot, using images from the Internet.

Tell the story of the cryptid that became known as the kangaroo and consider the facts presented in the report about undiscovered life on Earth [all information needed is in the introductory passages above]. Speculate about creatures that might yet be discovered.

3. Ask the children, working in pairs, to create their own cryptid. The format of their work can be determined by current curriculum plans for your class e.g. fact file, labelled diagram, written description.

4. Each pair should present their ideas. Ask the audience to evaluate the likelihood of such a creature existing. Work from this activity could be collated into a class Cryptid Book.

## SEN Activity Ideas

Provide a writing frame to support the pairs' activity.

## SEN Discussion

Show a couple of the Cottingley Fairies photographs. Do the children believe these could be genuine photographs? Why/why not? Can we disprove the existence of fairies?

## High Potential Learner Activity Ideas

Investigate Alien Big Cats. What evidence is offered for their existence? What's your theory about Alien Big Cats? How might an Alien Big Cat be caught?

## High Potential Learner Discussion

Cryptozoology is considered to be a pseudoscience. What is a pseudoscience? Is it your judgement that this is a fair assessment?

## Positive, Negative, Interesting

Is scepticism a good thing?

## Weird and Wacky!

Some photographic evidence of previously undiscovered creatures has been revealed as elaborate hoaxes [think Loch Ness monster and fairies]. What motive might people have for doing this? Plan, set up and take your own hoax photograph of a cryptid.

## Useful Resources

<http://www.lochnesssightings.com/>  
**An interesting log of sightings of the Loch Ness Monster up to the present day.**

<http://eisforexplore.blogspot.co.uk/2013/03/kid-cryptozoology.html>  
**Offers ideas for Bigfoot related activities**

**Fiction: The Cryptid Files - a series of books by Jean Flitcroft based on cryptozoology. The first is 'Loch Ness'. ISBN 978-1848409408**

**Fiction: The Abominables by Eva Ibbotson. ISBN: 978-1419712159**

[www.philipcoppens.com/cottingley.html](http://www.philipcoppens.com/cottingley.html)  
**An article giving the background to the Cottingley Fairy photographs.**

# New Species

## KEY STAGE

KS3

### TIME

2-3 hours (depending on the follow up activities chosen)

### SUBJECT AREAS

English, Geography, Art, Design and Technology, Science.

### RESOURCES

Flip chart, paper and pens, computer/internet access, specimen jars and labels, pens, petri dishes/microscope if looking into elements/cells (bug net, pond dipping net, tray if you have them).

### EXTENSION RESOURCES

Computer access, paper and pens.

### H&S

If using tools to gather items then appropriate safety precautions should be taken.

## Learning Outcomes

- \* To increase creative and analytical thought processes by exploring alternative ideas and methods
- \* To extrapolate outcomes from a set of unknown variables
- \* To increase knowledge of presentation software and research
- \* To present findings to others through the opportunity to demonstrate to class

## About the Activity

New species - where are you likely to find them? In the Amazon rainforest? In the depths of our many uncharted oceans? Surprisingly enough you can find them right on your doorstep, in your own back garden.

The easiest place to find a new species is in your back garden.

The 18th-century naturalist Gilbert White (1720-93) agreed: "All nature is so full, that that district produces the greatest variety which is the most examined."

Beginning in 1971, retired biologist Jennifer Owen catalogued the wildlife in her suburban Leicester garden. After 15 years she published her interim results, which included 533 species of parasitical wasp alone. Fifteen of these had never been recorded in Britain, and four of them were completely new to science.

Britain has about 16 million back gardens, each containing more than 4,000 invertebrates (worms, spiders, insects) and about 250 plants.

Research from 2002 by Newcastle University included soil micro-organisms and calculated that the average back garden contains 3.5 million species - twice as many as have been identified on the planet.

Source © The Telegraph.

# New Species

## Suggested Plan

Introduce the topic by reading the information above. Discuss all possible outdoor places you could investigate. Split the class into teams and get each team to research a different area. Have pictorial examples ready (see Resources section) and use them to compare to findings.

1. Using a metre square plot, find out what's there. It could be bugs, insects, leaves, plants, anything. Ask students to collect and document their findings. Did they spot anything odd? Encourage them to research their findings to see what they may have discovered. Have they found anything new?
2. Look at the different parts of the materials found using a microscope. What are they made of? What uses do they have?
3. Think about how some of the things found might develop or change in the future to adapt to changes in climate etc. How could this be documented?
4. Ask groups to present their findings using mixed media - drawings/photos, scrap books in the form of a journal/ PowerPoint presentation/ website discoveries etc.

## SEN Activity ideas

Provide a list of websites with clear information to help students research some of the information. Create a PowerPoint template that information can be added into. Show examples of how discoveries have been documented in the past.

## SEN Discussion

What great discoverers inspired the class? How do they relate to them? What was the oddest discovery?

## High Potential Learner Activity Ideas

Think about past discoveries, the platypus, flightless birds etc. How would you have documented your findings and convinced others that they were fact and not fiction? Would you be able to transport specimens home? How would you do this? Ask students to pick an example and think about how they would have done things differently then. Ask them to show (using any media) how they would record their findings now.

## High Potential Learner Discussion

How might climate change develop and how would that affect things? How do you think creatures would change if our land mass were to decrease and our oceans become larger or if temperatures were to become more extreme? What new species might we find?

## Positive, Negative, Interesting

Should we be storing DNA for future generations?

## Weird and Wacky

Design a new species and explain how it has adapted accordingly.

## Useful Resources

### Spotting sheets

<http://www.wildlifewatch.org.uk/spotting-sheets>

### Field guide charts to buy

<http://www.field-studies-council.org/publications/fold-out-charts.aspx>

### How to discover a new species

[www.bbc.com/earth/story/20150119-how-to-discover-a-new-species](http://www.bbc.com/earth/story/20150119-how-to-discover-a-new-species)

### The story of a woman who discovered new species in her back garden

<http://io9.com/5841287/the-story-of-the-woman-who-discovered-new-species-in-her-garden>

### Discovering new species in your backyard

<https://nutsaboutplants.wordpress.com/2010/03/14/discovering-new-species-in-your-backyard>

### Inventors and discoverers

[www.thefamouspeople.com/inventors-discoverers.php](http://www.thefamouspeople.com/inventors-discoverers.php)

### Notable inventions and discoveries

[worldview3.50webs.com/inventions.html](http://worldview3.50webs.com/inventions.html)

### Meet the ocean explorers

<http://www.seasky.org/ocean-exploration/ocean-explorers-menu.html>

### Climate change and its effects

[climate.nasa.gov/effects](http://climate.nasa.gov/effects)

### Books/Papers

Strange New Species:  
Astonishing Discoveries of Life on Earth  
by Elin Kelsey

### Top ten books on the climate change movement

<http://www.theguardian.com/global-development-professionals-network/2014/jul/29/climate-change-movement-books>

# What's In There?

## KEY STAGE

**KS4**

## TIME

**2-3 hours (depending on the follow up activities chosen)**

## SUBJECT AREAS

**Computer Science, Design and Technology**

## RESOURCES

**Pens, paper, access to the internet**

## EXTENSION RESOURCES

**None**

## H&S

**None**

## Learning Outcomes

- \* To simulate real world experience
- \* To extrapolate outcomes from a set of unknown variables
- \* To encourage design thinking

## About the Activity

In today's connected world, no organisation can flourish without a good Information Technology department. Many of us are used to using computer systems in places of learning and in organisations we visit. However, not many of us understand how these systems are made and why they function as they do. Computers and data make no sense to an organisation unless they are all put together into a working robust computer system. This activity gives some suggestions for how to think about building a computer system from the beginning. It is recommended that the students read about the different steps and stages of software engineering – A quick summary is available from: <http://www.bbc.co.uk/education/guides/zm4dmp3/revision>

## Suggested Plan

1. Introduce the topic of building a computer system for an organisation. Give the case of Pharmasure, as detailed below.
2. Ask students to consider the different steps to building a computer system for Pharmasure. A set of questions is included as guidance.
3. Divide students into small groups and ask them to consider all the different stages to building the system and outline how they would go about it. Provide each group with a set of the questions and pens and paper or a computer on which to record their ideas.
4. Alternatively, divide the group into smaller groups of analysts, designers, developers and support teams, each working on a part of the system build.

## The Case

Pharmasure, a leading pharmaceutical company is looking to build a computer system to replace their paper based office. To start with, they are looking to start three of their main departments on the systems. Sales and Marketing, Finance and Human Resources are the first departments to be built.

A table of requirements for each department is given below:

DEPARTMENT	IMPORTANT FUNCTIONS	DATA NEEDED	NUMBER OF USERS	MEDIUM OF USAGE
SALES AND MARKETING	To be able sell and market products	Maintain a record of products	30	Mobile, Desktop
FINANCE	To be able to invoice and to pay	Maintain customer lists, bank accounts	10	Desktop
HUMAN RESOURCES	Hiring of employees, employment packages	Employee lists	7	Desktop

**INPUT** Screen based, to take in information and store it in the database

**OUTPUT** Screen based, to show results

**DATABASE** To record and store data

### How would you build your system?

1. What questions would you ask to collect requirements from the users?
2. What analysis would you do? How will you deliver what the users want?
3. What does your system design look like? Have you outlined the input, output and your database records?
4. What kind of people would you need? [can you come up with a list of job profiles you would have in your team]
5. How will you deliver usage? How will you test the system? Who will test the systems [users who will use it or the developers that put it together]?
6. Once the system is in place, how will you maintain it? Who will maintain it?
7. How do you measure success of your work?

# What's In There?

## SEN Activity Ideas

Outline the important steps in a computer system build. This could be done using a simple pro forma with some of the steps completed using information in the above link.

## SEN Discussion

What is the importance of having computer systems [for the organisation]?

## High Potential Learner Activity Ideas

Who would you like to be? What are your reasons for choosing this role?

- \* the analyst who gathers the requirements
- \* the designer who architects the system
- \* the developer who codes and puts it together
- \* the person supporting and maintaining it

Can you build the system using simple web-based tools? [www.w3schools.com gives good tutorials on the tools to use]

## High Potential Learner Discussion

How would you go about budgeting the project? Think in terms of time as well as money.

## Positive, Negative, Interesting

Should teachers be replaced by computers?

## Weird & Wacky!

What routine school tasks could be computerised?

## Useful Resources

### For an introduction to computer science

<https://www.khanacademy.org/computing/computer-science>

### For web based tools

<http://www.w3schools.com/>

### Basic coding and languages

<https://www.codecademy.com/>

<https://code.org/>

<https://www.khanacademy.org/computing/computer-programming>

<https://scratch.mit.edu/>