The G.A.T.E.WAYS Challenge

2010

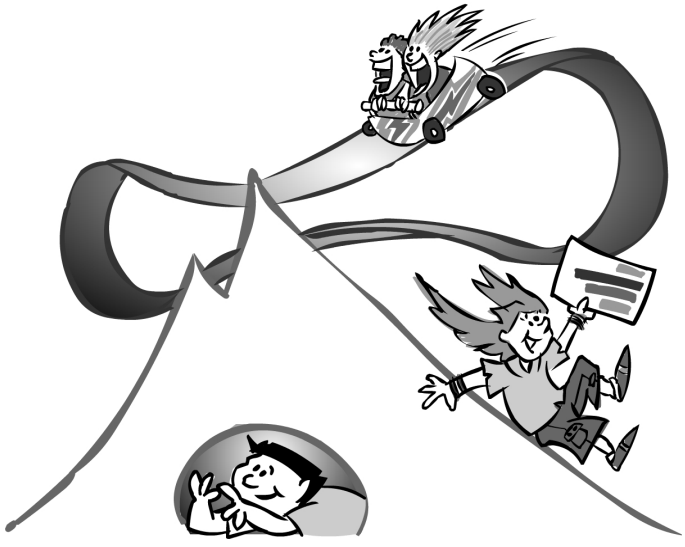
Preparing for the Challenge

Years 1 and 2

- Hints from the Challengers
- Checklists

Ask your teacher for a time to meet regularly to practise.

Your team should be able to prepare for the Challenge without assistance from your teacher, except perhaps for 'Zoomania'.



INTRODUCTION

The G.A.T.E.WAYS Challenge is a team based program that:

- stresses teamwork, not individual prowess
- provides all participants with opportunity for leadership
- is structured to help students learn to work together for a common goal
- practises the fundamental skills necessary for competent performance
- gives satisfaction from the activities themselves as well as the outcome
- emphasises having fun with learning

To take part confidently in The G.A.T.E.WAYS Challenge, teams need to spend some time preparing before the day. This booklet has been prepared in response to requests from teachers and parents for assistance in preparing their teams for The G.A.T.E.WAYS Challenge.

G.A.T.E.WAYS believes that teachers or a parent/coach will find these activities and checklists useful in ensuring teams are prepared for the Challenge. Regular times/sessions could be set aside each week for teams to meet and work through the activities. These activities are not meant to be the total preparation for the challenge.

Participants should understand that it is not just familiarity with the content that is important. They should practise working as a team and taking on the responsibilities of being a leader. Working to complete a task in a set time (say, 30 minutes) would also be valuable preparation.

The challengers will outline procedure and scoring, and offer “last minute advice” in practice workshops during the morning of The Challenge.

If you have any queries, please call G.A.T.E.WAYS on 9894 2116. However no further details about the content of the challenges will be divulged until the day.

GENERAL CHECKLIST

Decided on team name	☐	Appointed team mentor	☐
Decided on leaders	☐	Scheduled practice sessions	☐
Checked all application forms sent	☐	Scheduled final team meeting	☐

Cunning Escapes

Preparation Advice

In this challenge, you will need to combine your visual reasoning and detective skills to try and 'read' what is happening. What are the clues hinting at? What objects can you see in the pictures? Which of these objects are significant, and which are of no use?

For this challenge, you and your team should prepare by doing the following:

- identify the meaning of 'red herring' clues
- find out what a cryptic clue is – both visual and verbal
- try writing some cryptic clues of your own
- practise how to 'read' cryptic clues, and identify what information is relevant in these clues.
- complete a number of 'Spot the Difference' activities
- compare pictures that are and note the differences
- complete logic puzzles under timed conditions.
- practise working together cooperatively
- listen to each other's suggestions and ideas
- research names of different suburbs in and around the city that have 8 letters

Checklist

Our team members:

☐ have read and understand the scenario of this challenge.

☐ understand how to read and interpret cryptic clues.

☐ have practised writing our own cryptic clues.

☐ know what a 'red-herring' clue is.

☐ are familiar with 8-letter names of suburbs in and around the city.

☐ have practised describing visual pictures and images.

☐ have developed team strategies to encourage and support each other.

Zoomania

Preparation Advice

Team members will require assistance with preparation for this challenge. Teachers might choose to do these activities with the whole class.

Materials:

- Books on different types of animals, especially fish, mammals, insects, amphibians, reptiles and birds.
- Internet access
- A4 paper
- Writing materials
- Animal kingdom trees

Instructions:

1. Show students the simplified animal kingdom tree picture provided with all the different groups of animals. Ask them what they recognize and find pictures of those they don't. Discuss the differences between groups of animals, asking questions such as "Where would you find these animals? Do you think they hatch from eggs? Are they warm or cold blooded?"
2. Show students both animal kingdom pictures and ask them what the scientific names for the simplified groups are, and write these next to the common names.
3. On 5 separate pages of paper write the headings: mammals, birds, reptiles, insects, fish and amphibians. Ask them to find a picture for each group and print/photocopy it, gluing it in the centre of the appropriate page.
4. One category at a time, ask students to come up with the defining characteristics for each group (answers below). When correct, ask them to write down the answers and where appropriate label the physical characteristic on the animal picture.
5. Ask students to classify the animals listed below, justifying each answer. Use the books and internet to present an image of each animal. Encourage a different justification each time.

Eg: *Which group does a snake belong to*? A snake is a reptile because it has dry skin like other reptiles.

Which groups do the following animals belong to?

Snake	Butterfly	Lion	Salamander
Echidna	Shark	Sting ray	Dragonfly
Axolotl	Tadpole	Toad	Koala
Rhinoceros	Elephant	Bee	Tuna
Electric eel	Whale	Pelican	Frill necked lizard
Grasshopper	Goanna	Turtle	Dolphin
Gecko	Ant	Dung beetle	Magpie
Mouse	Penguin	Crocodile	Seahorse
Emu	Kookaburra	Seagull	Frog

Mammal Characteristic

Are vertebrates
Are warm-blooded
Nearly all give birth to live young
Suckle young on milk
Have body covering of fur/hair
Have prominent external ears
Have a mouth with teeth
Breathe air through lungs

Bird Characteristics

Have feathers
Are warm-blooded
Are vertebrates
Breathe air through lungs and have air sacs
Have two legs and two wings
Have a bill or beak
Hatch from eggs

Reptile Characteristics

Are vertebrates
Are cold blooded
Have scales
Usually hatch from eggs
Have dry skin
Have 4 legs or no legs
Have earholes not ears
Breathe using lungs

Amphibian Characteristics

Are vertebrates
Are coldblooded
Live on land and in water
Have webbed feet
Breathe with lungs and gills
Have moist smooth skin
Have 4 legs or none
Most produce eggs
Eggs have no shell
Have two stage life cycle for eggs to hatch into aquatic-gill bearing larvae

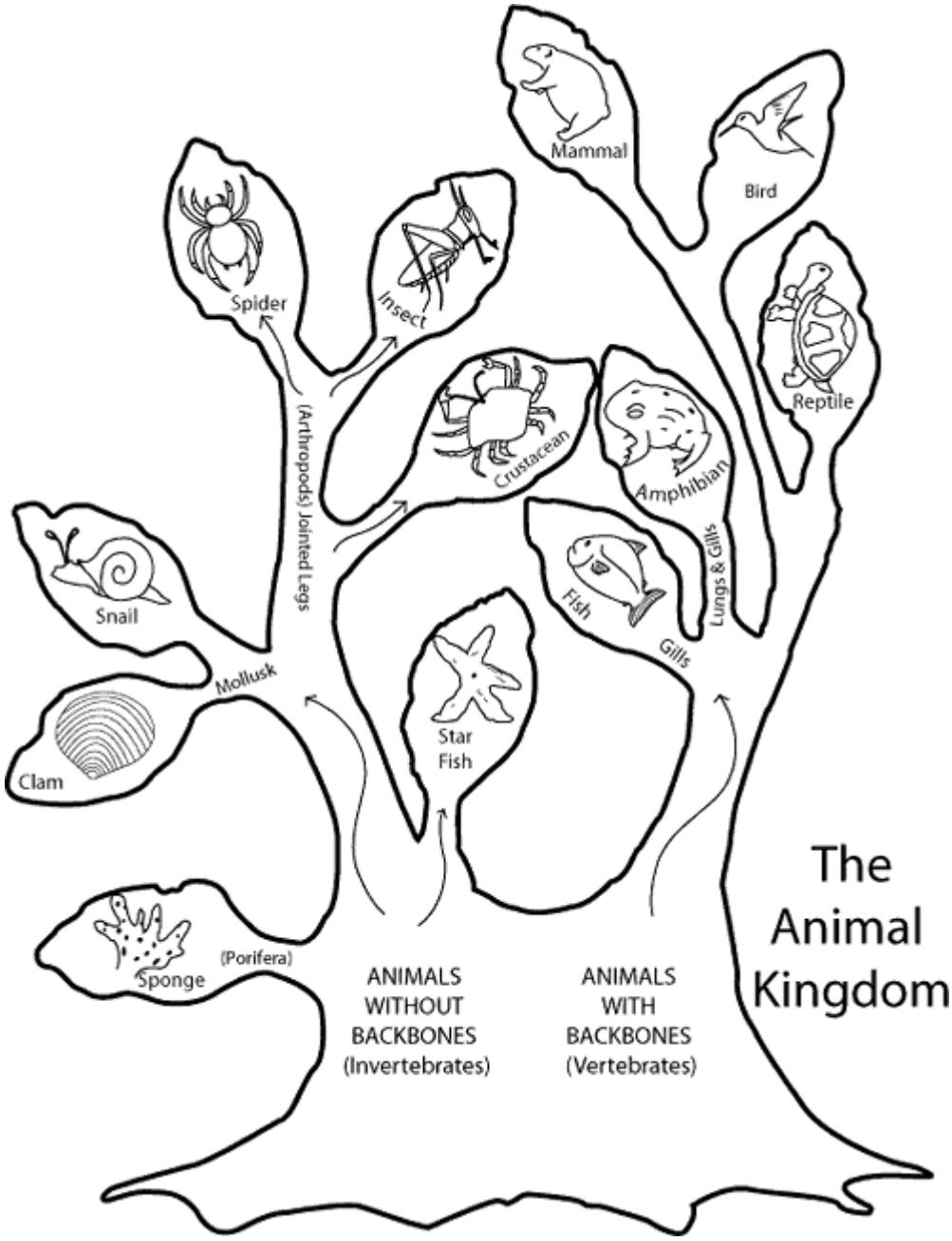
Fish Characteristics

Breathe using gills
Live in water
Have scales and fins
Are cold blooded
Are vertebrate
Mostly lay eggs

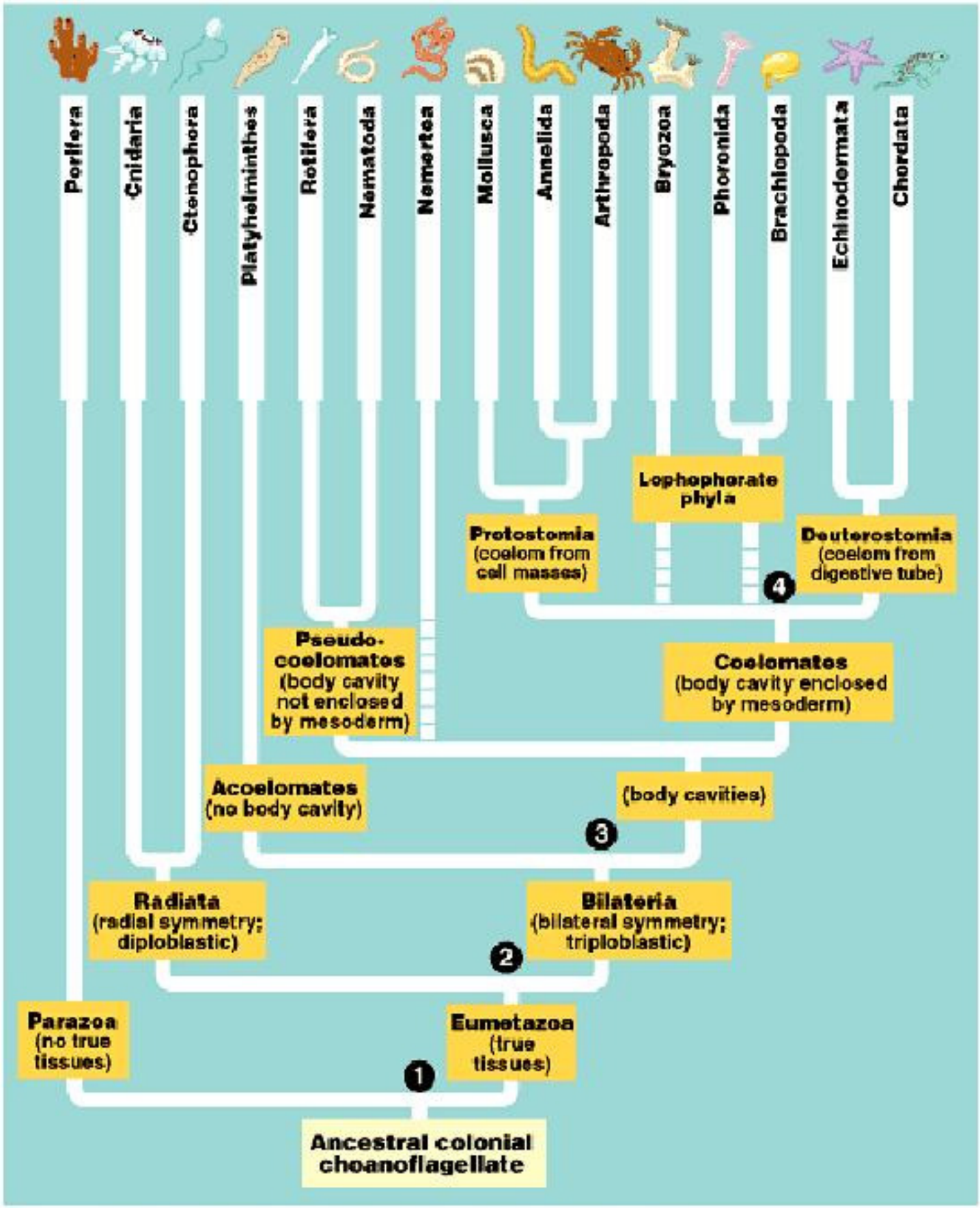
Insect Characteristics

Have an exoskeleton
Have three body parts: thorax, abdomen, head
Have antennae
Have air sacs to breathe
When present, eyes are compound
Have 3 pairs of jointed legs
Most undergo metamorphosis into adult form from a pupae
Most have wings at some point in their life
Are very closely related to arachnids and crustaceans

BONUS QUESTION: The phylum arthopoda includes insects. What other animals that are not insects does it include?


Mammal
Bird
Spider
Insect
Reptile
(Arthropods) Jointed Legs
Crustacean
Amphibian
Lungs & Gills
Snail
Fish
Gills
Mollusk
Star Fish
Clam
Sponge
(Porifera)
ANIMALS WITHOUT BACKBONES (Invertebrates)
ANIMALS WITH BACKBONES (Vertebrates)
The Animal Kingdom

This is included for interest only. Team members will not be challenged to recall scientific names.



Checklist for *Zoomania*

Our team members:

☐ understand the animal kingdom is made up of many different types of animals grouped together based on their physiological characteristics and these groups are subdivided

☐ Can list several different groups of animals

☐ Can distinguish between different phyla (groups) of animals due to different characteristics

☐ Can list major characteristics of birds, mammals, reptiles, arthropods, amphibians, fish

☐ Have had detailed discussions about why these characteristics would benefit these types of animals

☐ Know the scientific names for the above phyla

☐ Are confident in identifying which category a picture of an unfamiliar animal belongs to due to physical characteristics

☐ Can explain the differences and similarities between insects and arachnids

☐ Understand the terms vertebrate and invertebrate, exoskeleton

☐ Appreciate the different types of animal diets (herbivore, carnivore, omnivore, insectivore) and what kinds of teeth are important for each

The Pitch

Preparation Advice

This is a challenge requiring lots of brainpower and imagination. It will call for all team members to work together and be ready to perform for their team. To help you prepare for the challenge your team can do the following:-

- Look at lots of different ways to advertise products on television.
- Decide what makes a particular advertisement a 'good' one.
- Try to work out who the television advertisements are trying to sell products to.
- Practise rhyming words and sentences.
- Participate in some drama games that ask you to play different characters.
- Experiment talking with different sounding voices, some funny, some serious and some strange.
- Team members should practise working out problems co-operatively. It is important that team members should be familiar with one another and respect the wishes of the team leader and his or her delegation of tasks.

Checklist

Our team:

- has read the scenario and understands the way the challenge works.
- can identify the good points in a product
- knows how to decide who an advertisement is being aimed at
- has practised rhyming words and sentences
- has developed strategies to help and encourage each other
- has developed strategies for allocating tasks evenly, effectively and efficiently
- has developed strategies to remain calm, positive and focused at all times
- has practised using voice and body effectively to communicate a message

An Invitation From NASA

Preparation Advice

Your task will be to replicate a spacecraft so that it is able to go into production. To achieve this task you will need to have outstanding observation skills, be able to work within a timeframe and be a cooperative team member. Here are some activities your team can practise at school.

THREE CLASSROOM ACTIVITIES

- In a team of 4 students copy a 3 d model using construction materials eg. Lego
- In a team of 4 students copy a 2d model using construction material eg. Lego. Use blocks in vertical and diagonal positions.
- In a team of 4 students construct a model using axles and levers
- Team members should handle a ratchet and understand what it is used for

Checklist

Our team members:

☐ understand the different types of shapes- squares, hexagons, triangles, rectangles and octagons

☐ understand the meaning of- rotation, forwards, backwards, diagonal, vertical and horizontal.

☐ know how to draw squares, hexagons, triangles, rectangles and octagons

☐ have had experience using axles and levers

☐ can explain how a ratchet works and give an example of where they are used

☐ understand what teamwork means

☐ have had practice in being a team leader and a member of a group

☐ are good listeners and have sound observation and problem solving skills