



upstart press

# Queen of the Cosmos

## Beatrice Tinsley

### Teacher Resource



#### AUTHOR

Maria Gill has written 62 books over the last twenty years. Her book 'Anzac Heroes' with Marco Ivancic was named the 2016 Margaret Mahy Book of the Year. She also has 11 Storylines Notable Book certificates. Maria trained as a Primary teacher (DipTeach, bEd), journalist (GradDipJ), and has a master's in creative writing. In 2020, Storylines awarded Maria the Margaret Mahy Medal for outstanding services to children's literature.

[www.mariagill.co.nz](http://www.mariagill.co.nz)

#### ILLUSTRATOR

Alistair Hughes has been passionate about illustration and astronomy for as long as he can remember, and this book allowed him to indulge in both. Alistair has provided artwork for ten books, four with Maria, and has written two of them himself including 'The New Zealand Night Sky'. He also provides illustrations for numerous publications in New Zealand and across the world, and his design work recently won a category at the 2023 Voyager Media Awards. [shorelinecreative.co.nz](http://shorelinecreative.co.nz)

#### BEFORE

- What does the author mean by 'Queen of the Cosmos'?
- What do you know about the cosmos/universe?
- What do you think Beatrice Tinsley is famous for?

#### DURING

- What does Beatrice mean by, 'You can do anything if you put your mind to it'?
- Why do you think the author has labelled Beatrice as 'gifted'?
- What is the difference between astronomy and cosmology? (See glossary, page 32)
- What is rationed coal? (see glossary page 32)
- What does Beatrice's favourite game say about her personality?
- Why was it difficult living in England after the war?
- What other traits have you learned about Beatrice?
- How do you think scientists counted a billion stars?
- On pages 14-17 it is implied that Beatrice is having difficulties with her career. What are they?
- Why do you think Beatrice's husband uttered that ultimatum? Do you think he regretted it? Why?
- In her last letter to her father Beatrice said she had 'been one of the luckiest people'. What does that say about her considering the cards she's been dealt?

#### AFTER

- Why do you think people back then thought women should do all the housework? Prepare a debate about who should do the housework.
- Beatrice's way of discovering new information is called synthesising. What does that mean? Give an example.
- Design a musical instrument and make it out of cardboard.
- Find out some of the questions Beatrice puzzled over on pages 12-13. For example: How old is the universe? Where did it come from?
- Design a poster promoting sun safety.
- Write some inquiry questions you have about our galaxy - the Milky Way - and find your answers.



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### SCIENCE ACTIVITY

#### What you need:

- Coffee filters, any size, 2-6. (Iron them flat before using.)
- One large sheet black construction paper
- One large sheet of colored or white construction paper
- 3-coloured watercolour marker pens
- Water in a cup
- Plastic sheet to protect table
- Eye dropper or drinking straw
- Scissors
- Glue stick
- Blue (or other color) glitter (optional)

#### What to do:

1. Draw colourful designs on the filters. Draw stars, planets, moons, and comets.
2. Spread out the plastic sheet to protect the table and lay the coffee filters on it. Use the straw or eye dropper to dribble a few drops of water on the filters. The water will make the colours run together.
3. Let the filters dry. When dry cut them into galaxy shapes. Make it into an oval shape like The Milky Way galaxy. Arrange the galaxies on the sheet of black construction paper and glue them down.

### SCIENCE ACTIVITY

#### What you need:

balloon, stars stickers, glitter, glue, marker

#### What to do:

- Blow up the balloon and stretch it out.
- Deflate the balloon and add star stickers.
- Draw a squiggle to represent light waves.
- Glue patches around the balloon and sprinkle on glitter (to resemble space dust).
- Blow up the balloon a little bit and measure the space between stars. Then blow up the balloon some more and measure the space between. Do this several times until fully inflated.

#### What's the science?

As the balloon inflates, it appears that the stars are moving away from each other. As the universe expands, the distance between galaxies grows. The further a galaxy is from Earth, the faster it is travelling away from us. As the universe expands light waves (the squiggly lines) travelling through space get stretched out. Beatrice Tinsley theorised that the universe is continually expanding. See more here: [rb.gy/trixif](http://rb.gy/trixif)

### MINDMAP

- Draw a mindmap.
- In the middle of the mindmap write 'Beatrice Tinsley's characteristics'.
- In each of the clouds, write her traits. For example, curious...
- Write a paragraph about similar characteristics you have and what that helps you achieve.

