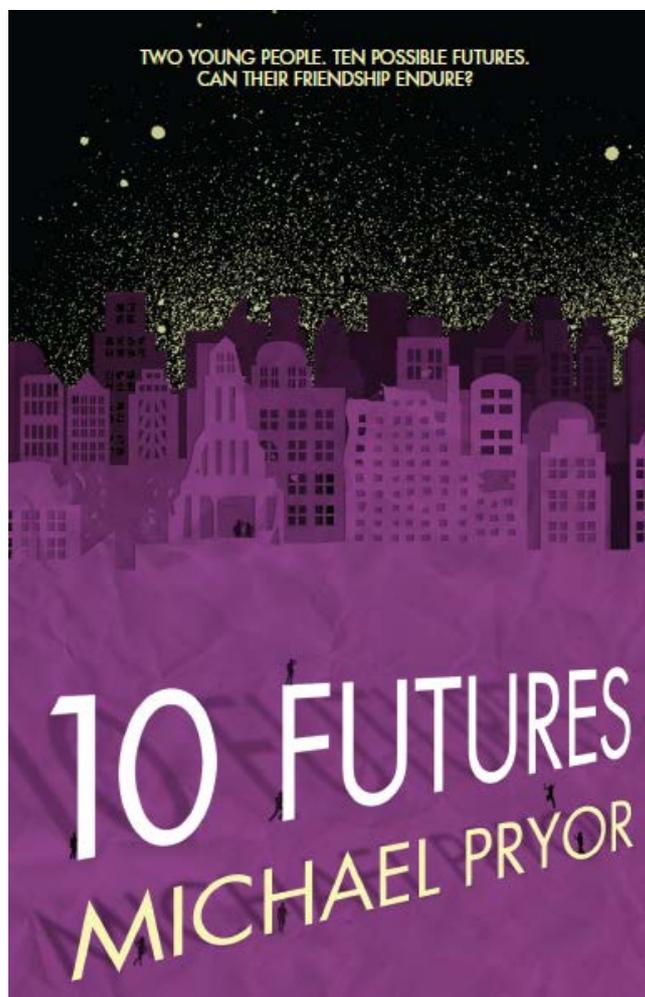


10 FUTURES

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TEACHERS' RESOURCES

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Michael is one of Australia's best-known authors of speculative fiction, and has also developed extensive support materials for the Australian Curriculum.

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WHY STUDY THIS BOOK?

10 Futures is particularly suitable for study at Year 9 or 10 English in the Australian Curriculum as it provides a chance to analyse and explore a text in terms of its structures and language features, while providing contexts that are both familiar and unfamiliar. The future-based scenarios are perfect for reflecting on times that are distinctly at variance with what students know today. Naturally, each story highlights issues from a number of different perspectives, and raises questions that are ripe for discussion. Some stories end in a deliberately open-ended fashion to encourage individual interpretation and evaluation where vastly changed historical, social and cultural circumstances need to be taken into account. The stories will challenge and provoke moral and ethical debates because of the way relationships are tested within the straitened times of global crisis.

Further, *10 Futures* also provides a text which explores the future of sustainability, a key cross-curriculum priority, within a narrative structure. Some of the possible futures explored include those where the environment is radically changed, and sustainability is of crucial importance.

You can find a book trailer exploring the scenarios in *10 Futures* at:

<http://youtu.be/NuEGayRwolc>

INTRODUCTION

The future will be different, quite possibly vastly different, from how we live now and yet people will still be fundamentally, recognisably human. People a hundred years ago behaved in many ways that are familiar to us today. A hundred years from now, people will most likely behave in many ways that we could recognise. They will be frustrated, delighted, and irritated by events. They will love, hate and laugh. They will live lives.

Of course, manners and morals change as times change. A hundred years ago, children were raised in very different ways from the way they are today. It's likely that children in the future will be raised very differently from our early twenty-first century approaches. The roles of men and women, the way people feel about authority and the way people treat animals, for example, have changed and will continue to change. The crimes – or sins – of the future might be very different from what we think of criminal or sinful today.

In the book you have in your hands, two young people face ten different, separate futures. The only constant is their friendship. How will they experience these worlds? What challenges will face them? What opportunities will be there for them? How will they cope?

The better we can imagine the future, the better prepared we are for it. What happens now will determine which future we will have. The future stretches out in front of us, but it's not carved in stone. Instead of a future, we have countless possible futures.

SCIENCE FICTION AND THE FUTURE

One of the misunderstandings about science fiction is that it's about prediction, that writers sit around and try to guess what's going to happen in the future. Trying to predict futures – and getting it right – is the province of prophecy, not SF. It's more useful to think of science fiction as about exploration. Much SF explores possible futures and looks at how humanity will deal with the changes that time brings about.

A key tool in this is extrapolation. Extrapolation is the process of taking something that is known and projecting it forward, imagining where it's going to go. Every story in *10 Futures* is firmly based on what we know now, and then imagining how it's going to affect us in the future.

SCENARIOS AND THEMES IN 10 FUTURES

Year	Major Scenario	Minor Scenario/s
2100	Artificial Intelligence	Robots Euthanasia Resource shortages Genetic manipulation
2030	Global financial collapse	Self-sufficiency Resource usage Alternative economies
2120	Cloning	Robots Medical miracles The anti-science movement Nanotechnology
2040	Genetic selection	Geothermal energy Utopia The end of poverty, racism, genetic diseases
2020	Pandemic	Solar power
2090	Global warming	Family divorce Population shifts Solar power Green building technology Identity theft Quantum computing Mass extinction
2070	Religious fundamentalism	Sexism, roles of males and females
2050	War	Resistance, terrorism
2080	Long life	Fusion power New art forms
2060	Overpopulation	Power shortages Resource shortages The rights and responsibilities of government Propaganda

1: 2100

The main focus of '2100' is Artificial Intelligence.

'Artificial Intelligence' is a shorthand way of referring to computers that have reached a sufficient level of complexity as to become self-aware – and possibly smarter than the humans who created them. Sometimes, the achieving of this breakthrough is called the Technological Singularity, the point beyond which the future will be drastically changed.

If this happens, this will highlight, more than ever, the age-old philosophical question of what it means to be human and – by consequence – this will raise human rights issues. Will these entities known as AIs have rights? Will they be able to own property? Will people be allowed to own AIs or will that be considered slavery?

The technological basis for this story is well understood. It's a simple thing to look at the increase in the capabilities of computers in the last twenty years, and then to imagine that pace of development continuing into the next century. AI may not come about simply through more and more powerful computing, however. Complexity, rather than speed, could be the answer. One promising avenue is the research into Artificial Neural Networks, which investigates ways to duplicate the dense interactions that go on inside our own brains.

How do we decide if a machine is self-aware? One way is the Turing Test.

The Turing Test was devised by Alan Turing, a mathematical genius whose work on breaking German codes in World War II helped end the conflict earlier than it would otherwise have been.

In short, the Turing Test is where someone has a text-only conversation with someone they can't see, who could be a human or could be a machine. If the person cannot reliably tell the machine from the human, the machine has passed the Turing Test.

Comprehension

_____ owns an Artificial Intelligence machine (an AI). The AI is named _____. _____ manages the house, and also owns some _____, including a _____, a _____, and a flock of _____.

_____ is dismayed, however, when the government _____ Program comes to the door, looking for the AI. The government _____ Program is looking for anything that might contain rare metals, and _____ has _____ inside her.

_____ gets help from her aunt _____ who is a _____ lawyer. They aim to prove that _____ is human, and so can't be taken by the _____ Program.

The fact that _____ owns _____ proves that she is human.

In depth

1. In *10 Futures*, what indicates a change of narrative point of view?
2. Explain the parallel between Sam's grandmother and Tara's AI.
3. Why doesn't Tara want the Recovery Program to take her AI?
4. List five things that Tara's AI does that you think are very human.
5. Argue the opposite. Why would someone say that the AI isn't human?
6. What rights do you think an AI should have?
7. List five benefits of developing Artificial Intelligence and five dangers.
8. What does Sam think about micropets and why?
9. Why does the court place so much importance on micropets?
10. What insights does Sam have into Portia's reluctance to die?
11. If someone couldn't see you, how would you convince them that you're human?
12. List ten words to describe Tara in this story and ten words to describe Sam in this story.

Going further

1. Find a copy of the Universal Declaration of Human Rights (<http://www.un.org/en/documents/udhr/>). Pick your Top 5 Human Rights and list them in order of importance. Justify your choices.
2. Where is Burkino Faso? Find out five things about it and share with the class.
3. Write a piece in the first person, set in 2100, where you encounter an AI in your everyday activities.
4. Rewrite the final scene of this story from the point of view of the AI.

Find out more

1. For more on Artificial Intelligence and the Technological Singularity, Wikipedia has an excellent timeline of the development of intelligent computers: http://en.wikipedia.org/wiki/Timeline_of_artificial_intelligence
2. Another useful site is 'A (Very) Brief History of Artificial Intelligence': <http://www.aaai.org/AITopics/assets/PDF/AIMag26-04-016.pdf>
3. If you'd like to chat to an AI, try Jabberwacky: <http://www.jabberwacky.com/>
4. The best book on the developments in AI is *The Singularity Is Near* by Ray Kurzweil (2005)
5. For more on rare elements and their shortages, see <http://www.innovationnewsdaily.com/gadgets-cost-fortune-precious-110216html-1792/>
6. For more about Alan Turing and the Turing Test, see <http://www.turing.org.uk/turing/scrapbook/test.html>
7. To take an online Turing Test where you have an online text-based conversation and have to guess whether you're chatting to a computer or a human, try <http://www.turinghub.com/>

2: 2030

The main focus of '2030' is Global Financial Collapse.

The end of civilisation as we know it has fascinated SF writers since HG Wells. The form of the catastrophe has varied, often reflecting political and social developments of the time. In the 1950s, for instance, after Hiroshima, many stories were written about how people would survive after a nuclear holocaust. Sometimes called 'apocalyptic fiction', the emphasis usually isn't on the event which causes the end of the world, but rather on the way that ordinary people cope with the end of the world.

The Global Financial Collapse featured in '2030' is a classic extrapolation. Look at the events in the international money markets over the last few years. Consider the panic when stock markets plunged and the reaction from governments and on the streets. Now project this forward, imagine it bigger and more comprehensive. If the banking and financial systems collapse entirely, much of the modern world would follow. Now imagine a world after this catastrophe. Our era's financial transactions would be considered highly suspect. The barter economy would rule!

Comprehension

Put these events in the correct order

1. Tom Mallios escorts Harley to the bridge.
2. Tara repairs the fence.
3. Sam haggles for an old mobile phone.
4. Tara gives evidence against Harley.
5. Sam helps Tara out of the old golf clubhouse.
6. Tara treats the feet of the pigs.
7. Tara sweeps up after the market.
8. Dr Hosikian gives the judgement and sentence of the council.
9. Jonas says he saw Harley push down Tara's fence.
10. Sam sands some shovel handles.

In depth

1. If there's no mobile network, why does Sam want a mobile phone?
2. What does Tara like about the old photographs in the golf clubhouse?
3. After Dr Hosikian's verdict, why does Tara react in the way she does?
4. What does Sam think about Harley?
5. Was the Community Court run fairly?
6. Why did Jonas and Margo support Tara's story?
7. List five words to describe Tara in this story and five words to describe Sam.
8. Did Tara do the right thing in the court? Why?

Going further

1. Imagine you have to grow all the food you eat. Make a list of what would be available to you in spring, summer, autumn and winter.
2. Imagine Tara's neighbourhood has a newsletter. Interview Harley after the

verdict has been announced.

3. Write a schedule of a typical day in the life of Sam or Tara in their neighbourhood.
4. Make a list of skills that you think would be important if you lived in the neighbourhood.
5. Take a look at your life today. What would you miss most if you lived in the neighbourhood?

Find out more

Here's a list of books where the world ends and/or civilisation collapses.

- **Day of the Triffids** – John Wyndham
Blindness and giant flesh-eating plants
- **On the Beach** – Neville Shute
Nuclear holocaust
- **Lucifer's Hammer** – Larry Niven and Jerry Pournelle
Comet hits earth
- **The Stand** – Stephen King
Plague
- **Canticle for Leibowitz** – Walter M Miller Jnr
Nuclear holocaust
- **The Drought** – JG Ballard
Drought
- **The Death of Grass** – John Christopher
Famine after all grass and cereal crops die
- **Blackout** – Michael Pryor
Cosmic electromagnetic pulse ruins everything electrical
- **The Purple Cloud** – M.P. Shiel
Strange, naturally occurring poison gas
- **Stand on Zanzibar** – John Brunner
Overpopulation
- **The Postman** – David Brin
Nuclear holocaust

3: 2120

The main focus of '2030' is Cloning and Medical Miracles.

It has been suggested that the twenty-first century will see a revolution in biological sciences, comparable to the Industrial Revolution in the eighteenth century. Much of this will come about from a deeper understanding of the mechanics of genetics and the operating of the immune system. Cloning will be commonplace but, as with any substantial technological change, this will pose ethical dilemmas. What is the status of a clone? What rights do they have? Will the benefits of cloning outweigh the ethical considerations?

Comprehension

True/False Quiz

1. Sam's grandmother is in hospital.
2. Ms Sellars is in charge of the hospital.
3. Tara and Sam found the body snatchers in the car park behind the hospital.
4. Sam likes peanuts.
5. Tara doesn't like hospitals.
6. Sam's Aunt Ria has written a book.
7. Sam is a glass half-full kind of guy.
8. Sam's Aunt Ria hates nanobots.
9. The doctor at the beginning of the story is named Li.
10. Medical matters and morale are the 3 Ms of modern nursing.

In depth

1. Explain why Sam is unhappy about being at the hospital.
2. Describe Sam's Aunt Ria.
3. How does Sam feel about nanobots?
4. Why does Ms Sellars react in the way she does?

Going further

1. How would you feel if you had a clone – but a clone that was doomed to work in a dangerous, life-shortening place?
2. List five arguments in favour of vegetarianism and five in favour of including meat in a diet.
3. What do you wish medicine/biological science could do for you? List three things you'd like fixed/changed about yourself.
4. Malaria is the most costly disease in the world today. The Gates Foundation is dedicated to wiping it out (<http://www.gatesfoundation.org/topics/Pages/malaria.aspx>). Choose a disease you'd like wiped out and present a case in favour of this course of action. Why this disease and not something else?

Find out more

1. Transhumanism is a movement exploring the possibility of using technology to take humanity above and beyond our current biology. For a short introduction to transhumanism, go to http://www.youtube.com/watch?v=yj_-sBNQKcQ
2. A thorough and balanced introduction to clones and cloning can be found at the Human Genome Project website: http://www.ornl.gov/sci/techresources/Human_Genome/elsi/cloning.shtml
3. For a video discussion Introduction to Nanotechnology, go to the Vega Science site: <http://www.vega.org.uk/video/programme/3>

4: 2040

The main focus of '2040' is Genetic Selection/Genetic Screening.

When the human genome was completely sequenced in 2003, it pointed to a future of extraordinary potential. Already, based on this information, tests exist that can show a predisposition to various cancers and other illnesses like cystic fibrosis. Genetic counselling already exists for couples who are concerned about possible genetic conditions. Possible treatments for genetic diseases are being researched with a far greater chance of success, thanks to this gene sequencing.

With all this, it's not too much of a stretch to imagine a world where genetic screening, testing and matching have moved from the new and exotic to becoming commonplace. This, of course, would be accompanied by certain cultural shifts . . .

Comprehension

1. Sum up this story in 140 characters.
2. Write ten questions designed to test how well someone has read this story.

In depth

1. The future depicted in this story is a utopia. List the details that indicate that this world is a paradise.
2. Why does Tara want to help Sam?
3. Why is Sam reluctant to approach Lola?
4. Is Tara right to steal Lola's hair sample?

Going further

1. This book is written in the present tense. Take one narrative section from this story and change it to the past tense.
2. This book is written with a third person narration, with the stories alternating between Tara's point of view and Sam's point of view. Take one narrative section from this story and change it from the third person to the first person.
3. List the pros and cons of the sort of genetic screening depicted in this story.
4. List five tags you could append to this story to highlight the main issues, themes and items of interest.

Find out more

1. Visit the NSW Government Centre for Genetics Education (<http://www.genetics.edu.au/>) for up-to-date information and an insight into the range of services offered.
2. Visit the Human Genome project site (http://www.ornl.gov/sci/techresources/Human_Genome/home.shtml) for the history of the project and its recent developments.
3. For more on Geothermal Energy, visit the Australian Academy of Science site: <http://www.science.org.au/nova/116/116key.html>

5: 2020

The focus of '2060' is a pandemic. The nature of the pandemic is only hinted at (no chickens!) but is meant to be a more virulent version of the H5N1 Avian Influenza.

The symptoms mentioned, and the varying responses of people, are based on the 1918 flu pandemic which killed somewhere between 50 and 100 million people. Victor Vaughn, Surgeon General of the US Army at the time of this catastrophic outbreak, wrote: 'If the epidemic continues its mathematical rate of acceleration, civilisation could easily have disappeared from the face of the earth within a matter of a few more weeks.'

Comprehension

1. What can Sam smell when the wind is in the right direction?
2. How long have Sam and Tara's parents been gone?
3. How do you make soap?
4. What does Sam need before he can use the olive extraction machinery?
5. What job did Tara's dad have?
6. What sort of a rifle is the Steyr Mannlicher, according to Sam's dad?
7. Which comes first in this story, Sam getting dinner or Tara getting the guns out of the cabinet?
8. Who is the intruder who arrives at the farm at the end of the story?

In depth

1. Describe how Sam is feeling at the start of this story. Describe how Tara is feeling at the start.
2. How does Sam feel about Tara at the end of the story?
3. What would be the hardest part about living in such an isolated way as Sam and Tara do?
4. If you were Sam or Tara, what would you do at the end of the story?

Going further

1. What has happened to Tara and Sam's parents? Write a short story describing what went wrong.
2. If civilisation collapses, cities could be very unhealthy places to be. Why? List ten reasons why you'd want to get out to the country.
3. Make a plan of your survival refuge. What would you want and/or need to ensure you could adapt to the end of civilisation as we know it?

Find out more

1. Have a look at the World Health Organisation 'Global Alert and Response' site (<http://www.who.int/csr/en/>) which is the central repository for information on planning and preparedness for a range of possible pandemic situations. The current diseases under watch are:
Anthrax, Avian influenza, Crimean-Congo haemorrhagic fever (CCHF),

Dengue/dengue haemorrhagic fever, Ebola haemorrhagic fever, Hendra Virus (HeV) Infection, Hepatitis, Influenza, Lassa fever, Marburg haemorrhagic fever, Meningococcal disease, Human Monkeypox (MPX), Nipah Virus (NiV) Infection, Pandemic (H1N1) 2009, Plague, Rift Valley fever, Severe Acute Respiratory Syndrome (SARS), Smallpox, Tularaemia, Yellow fever.

Find out what you can about them, just so you know what to be looking for.

2. For more on the 1918 Influenza Pandemic, visit the Stanford University site: <http://www.stanford.edu/group/virus/uda/> or the special US Archives site featuring this deadly outbreak: <http://www.archives.gov/exhibits/influenza-epidemic/>.

6: 2090

The focus of '2090' is Global Warming.

According to Gaia Vince in *New Scientist* 28 Feb 2009: 'An average warming of the entire globe by 4°C . . . would render the planet unrecognisable from anything humans have ever experienced.' Habitat destruction and severe weather events would render much of the currently populated areas of the globe uninhabitable. This would necessitate mass migration and this, in turn, would produce misery and hardship.

Four degrees is well within the range of possible warming predicted by climate scientists.

Comprehension

1. Compare Sam's stone-throwing with Tara's.
2. Compare Sam's family situation with Tara's.
3. Compare Tara's aspirations with Sam's.
4. Compare Sam's opinion of school with Tara's.
5. Compare Tara's opinion of body modification with her parents'.
6. Compare Tara's view of identity theft with Sam's.
7. Compare Tara's skills with Sam's.
8. Compare Sam's view of re-adjustment with Tara's.
9. Compare Tara's parents with Sam's.
10. Compare neophobes with neophiles.

In depth

1. Think about Sam's position. Do you think he did the right thing, supporting Tara as he did?

Going further

1. Should children be allowed to divorce their parents? Why/why not?

2. What do you think about group work? List pros and cons.
3. Design an 'Are You a Neophile or a Neophobe' Quiz, complete with scoring system and grading.
4. What would you do in Tara's position? Imagine you have important information about a crime/wrongdoing, but you came across it by doing something wrong yourself. What's the right thing to do?

Find out more

1. Visit 'Wandering Gaia' (<http://wanderinggaia.com/>) the blog of Gaia Vince, the science journalist who wrote the article that was the inspiration for this story. It's full of posts at the cutting edge of climate science.
2. Try Firetree.net (<http://flood.firetree.net/?ll=-27.8390,138.1640&z=13>) for an interactive sea level rise map. Find where you live and see what effect various sea level rises would have on your home.
3. For more on quantum computers and their possible impact, see the excellent introduction at 'How Stuff Works':
<http://www.howstuffworks.com/quantum-computer.htm>
4. For more on Mass Extinctions, go to the Nova Science site:
<http://www.pbs.org/wgbh/nova/sciencenow/3318/01.html>

7: 2070

The focus of '2070' is fundamentalism. It looks at the rise of fundamentalist religions and belief systems, projecting forward to a Western society controlled by a ruthless cult. The story explores free will, individual responsibility and the role of women. The story imagines a new religion which gains unquestioned power and the implications of such a totalitarian theocracy.

This story also looks at the phenomenon of informants in authoritarian regimes and how a climate of fear works.

Comprehension

1. Why don't Sam's mother and father try to help him?
2. Why would the Guide ban stories?
3. Why would the Guide want to keep males and females apart?
4. Why does Sam's father hide his storybooks?
5. Why does Tara go to the park after Sam was taken?
6. Why does Tara go along with the mob in the park?
7. Why doesn't the little girl in the park go to play with the kite fliers?
8. Why is Sam in the prison cell under the Grand Temple?
9. Why does the Inquisitor want Sam to spy on Mr Anderson?
10. Why does Sam wander aimlessly when he's released from the Grand Temple?

In depth

1. After Tara hears that Sam has been taken, how does she get through the day?
2. Describe Sam's face while he's talking to the Inquisitor.

Going further

1. List pros and cons for single-sex schooling.
2. E. M. Forster once said 'Given the choice between betraying my country and betraying my friend, I hope I would have the courage to betray my country.' Take a side and argue that Forster is right or wrong.
3. Who was Vidkun Quisling, and why is his surname used to describe those who collaborate with tyrants?
4. How can good people do bad things? Investigate the Milgram Experiment and the Stanford Prison Experiment, two landmark psychological experiments that show what ordinary people will do if they're put in the wrong circumstances.
5. What exactly is Authoritarianism? How is this relevant to this story?
6. Would you spy on someone to save your best friend? Why/why not?

Find out more

1. For more on the Stanford Prison Experiment, visit the official website (<http://www.prisonexp.org>).
2. For an introduction to the Milgram Experiment see <http://www.holah.karoo.net/milgramstudy.htm>.

8: 2050

The focus of this story is war.

War may be an inevitable part of the human condition. In 1968, historians Will and Ariel Durant surveyed the past and concluded that only 268 of the past 3,421 years have been free of war. A future involving war, therefore, is quite feasible. At the moment, for most young people – thankfully – war is something that happens to someone else, in a place far away. Imagining war on one's own doorstep, however, is a way of making readers contemplate the brutality of war.

Comprehension

1. Who is the enemy Tara and Sam are fighting?
2. What does IRG stand for?
3. What role does Tara's father have?
4. Who is Carl?
5. Why is the enemy officer missing an ear?

6. What rank does the enemy officer have?
7. What does Tara think of the way the enemy officer has been treated?
8. Who is attacking Carl's group?
9. Who does Sam hate more than the enemy? Why?
10. Why does Tara let the enemy officer go?

In depth

1. What has war done to Sam?
2. What has war done to Tara?
3. What does Carl think of war?
4. What sort of a person is Carl?

Going further

1. Should females fight on the front-line in war? Should children?
2. The force that Tara and Sam belong to is modelled on the French Resistance in World War II. Research the French Resistance and deliver a presentation on one key figure belonging to it.
3. Apart from self-defence, is there ever a good reason for a country to go to war? Justify your answer.

Find out more

1. One of the great science fiction books that deals with future war and the role of young people in it is *Ender's Game* by Orson Scott Card. Read it and enjoy.
2. The Geneva Conventions are vital international agreements about the conduct of war. The International Committee of the Red Cross has a vital part in humanitarian considerations in war, and it hosts a site exploring the Geneva Conventions, their history and their implementations:
<http://www.icrc.org/eng/war-and-law/treaties-customary-law/geneva-conventions/>
3. Carl Philipp Gottfried von Clausewitz was a nineteenth century German soldier and writer on war theory. He was the one who originally said 'War is the continuation of politics by other means'. Visit the Clausewitz Homepage to find out everything about him: www.clausewitz.com/index.htm

9: 2080

The focus of '2080' is longevity.

The average human life expectancy has risen from 30-odd years in the Upper Palaeolithic era (50,000 years ago) to 67.2 today, with people living in Japan able to expect to live to 82.

Much of this improvement has come about through simple things like improved sanitation, nutrition and hygiene, but modern medicine has played a vital part in increased lifespans.

So we have a trend to live longer and longer. What will happen if this continues, if we have a vast and growing older sector of the community? How will that affect the way society works? On an individual level, long lives could mean that people may have time for vastly different careers, with the ability to go back and train without having to worry about running out of time.

Comprehension

1. How does Sam feel at the exhibition opening?
2. Why does Tara take Sam out after the exhibition opening?
3. What sort of insect does Tara eat at the exhibition opening?
4. Why does Sam continue working for Carla?
5. Why has Tara written on the ceiling of her bedroom?
6. Why does Tara want to be introduced to Carla?
7. Why do the Silvers want to raise the voting age to 35?
8. Why does Sam cut up the block of carbon composite?

In depth

1. Why is Tara talking about bringing down the system instead of working within it?
2. Describe Carla. What sort of person is she?
3. What does music do for Sam in this story?
4. Put yourself in Sam's place at the end of the story. What would you do next?

Going further

1. What are the pros and cons of a compulsory retirement age? If there is one, what should it be?
2. What do you think about compulsory voting?
3. What do you collect? Why?
4. Imagine that you could choose anyone in the world to act as your mentor. Who would it be, and why would you choose him/her?

Find out more

1. Some future technologies are mentioned in this story. For more on Fusion Power, go to the Culham Centre for Fusion Technology (<http://www.ccfе.ac.uk/introduction.aspx>) or Kids Net (http://encyclopedia.kids.net.au/page/fu/Fusion_power)
2. For Trapped Light, go to Nature News

(<http://www.nature.com/news/2009/091018/full/news.2009.1013.html>) and for Plasmonics, try Wise Geeks (<http://www.wisegeek.com/what-is-plasmonics.htm>)

3. Sam is willing to wait to get what he wants. When have you ever deferred, or waited, for something good? Investigate the Stanford Marshmallow Experiment, where children were told they could have one marshmallow straight away – but if they waited, they'd get two. The ability to defer the reward is seen as an important step in maturity. See <http://vimeo.com/5239013> for a demonstration of this experiment.

10: 2060

The focus of '2060' is Overpopulation.

According to the UN, 'world population is projected to grow from 6.1 billion in 2000 to 8.9 billion in 2050'. Naturally, this increase will strain human systems and affect the environment. Simple, everyday facilities such as water and power will be in short supply. International tensions will heighten over scarce resources. How will governments cope? How will ordinary people cope? These are classic concerns in speculative fiction.

Comprehension

1. List the main events of the story, in order.
2. List the five sentences you like most in the story. Explain your choice for each.
3. Choose another word that could be used instead of the words below. Your choice must be able to fit in the sentence the original word came from:
 - a. mired
 - b. scrimp
 - c. malcontent
 - d. malevolent
 - e. frivolity
 - f. bombardment
 - g. angular
 - h. ominous
 - i. ambivalent
 - j. sparse
4. List five questions you'd like to ask Tara at the end of this story, and five questions you'd like to ask Sam.
5. List three symptoms of Sam's mother's illness.
6. List all the characters who:
 - a. appear in the story
 - b. are mentioned in the story

7. List the three countries mentioned in this story and the nationality mentioned.
8. List the foods mentioned in this story.

In depth

1. Draw a map for this story. Include:
 - a. Tara's apartment block
 - b. Sam's apartment block
 - c. the government food depot
 - d. the school
 - e. the factory

Going further

1. When is it acceptable for governments to lie to their people?
2. Cast the movie of this story. Justify your choices.
3. Do some extrapolating. List five consequences you would experience first-hand for each of the following:
 - a. rationed electricity
 - b. rationed water
 - c. rationed food
 - d. rationed petrol
 - e. rationed internet
4. List three possible titles for this story.

Find out more

1. Read *Make Room, Make Room!* by Harry Harrison (1966), one of the all-time great novels exploring worldwide overpopulation. It was later filmed as *Soylent Green*.
2. Visit the UN Human Population Trends website (<http://www.un.org/esa/population/>) for the best, up-to-date statistics about where we're headed.

FURTHER READING

Here's a list of books that explore the near future. Each of them presents its own view of where we're headed. Some are classics, some are more recent, but each of them will make you think.

- **Fahrenheit 451** – Ray Bradbury
A future without books?
- **Nineteen Eighty-Four** – George Orwell
When it was written in 1949, 1984 was the future. It might still be.
- **Brave New World** – Aldous Huxley
Where is science taking us?
- **Feed** – MT Anderson
No privacy, nowhere
- **Matched** – Ally Condy
Really arranged marriages
- **The Knife of Never Letting Go** – Patrick Ness
Relationships are impossible
- **Neuromancer** – William Gibson
Cyberspace is a consensual hallucination
- **Z for Zacharia** – Robert C O'Brien
What would you do if you were the last person on earth?
- **Shade's Children** – Garth Nix
No adults, but it's no fun either