



BUILDING IN ABSTRACTION AND COMPLEXITY

"Giftedness Unfurled"
giftEDnz Conference
March 2012





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Associate Principals
Gifted Kids

OVERVIEW

- Link to the needs of gifted students
- Share strategy one: Conceptual Learning
- Share Strategy 2: Depth and Complexity

Warm Up

(BONUS POINTS FOR USING WORDS THAT START WITH C)

What do gifted kids not like? 	What do gifted kids not need? 
What are gifted kids not always? (e.g. well behaved) 	What is not good for gifted kids in our schools? 

GIFTED AND TALENTED STUDENTS HAVE THE CAPACITY TO:

- **Learn at faster rates** (Precocity)
- **Find, solve and act on problems more readily** (Intensity)
- **Manipulate abstract ideas and make connections** (Complexity)

Source:
VanTassel-Baska, J. (1988). Cited in Gross, M.U.M., Macleod, B., & Pretorius, M. (2001, p11). *Gifted Students in Secondary Schools. Differentiating the Curriculum*, (2nd edition). The University of New South Wales, Sydney: GERRIC
The Gifted Children's Advancement Charitable Trust

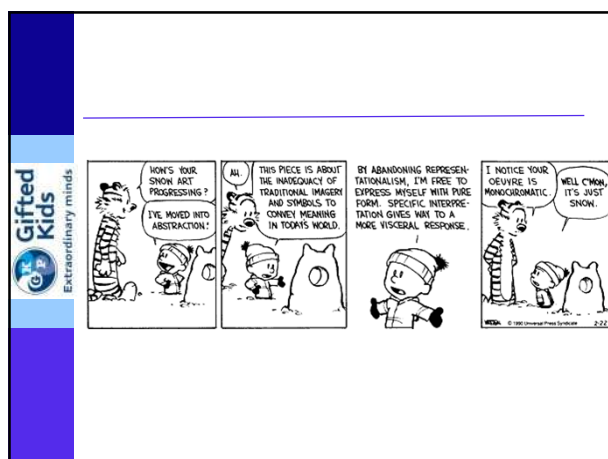
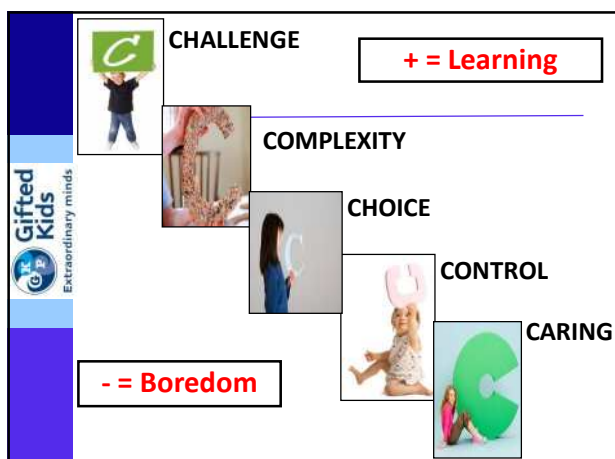
SPECIFIC LEARNING NEEDS

- Faster pace
- Conceptual approach - 'big picture'
- Opportunities to explore content in depth
- To engage with complex content
- Challenge - HOTS not MOTs (analysis, evaluation, creation)
- Choice

SPECIFIC LEARNING NEEDS

- Time to explore ideas and passions
- Opportunities for 'deep discussion'
- Opportunities to work with intellectual peers
- Real world experiences and contexts
- Opportunities to develop talents

In short ...



CURRICULUM FOR GIFTED STUDENTS

Needs to....

- include integrated content that is abstract and complex through issues, themes/concepts, problems.
- Move beyond factual learning to the discovery and generation of big ideas, generalisations, principles, theories.

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How Knowledge is Structured

Facts	Concepts	Principles
<ul style="list-style-type: none"> •Discrete pieces of information believed to be true •May typically fall within topics <p>•Example: Early New Zealand Settlement</p> <ul style="list-style-type: none"> – Early Maori migrated to New Zealand from Hawaiki. –They travelled in waka. 	<ul style="list-style-type: none"> •Ways of organizing or categorizing things that have something in common <p>•Example:</p> <ul style="list-style-type: none"> –Concept of change is a way of viewing immigration of people to new lands – ...a way of organizing facts about the settlers' experiences 	<ul style="list-style-type: none"> •Ideas and deeper understandings that give meaning to the concepts (essential understandings, generalizations, "big ideas") <p>•Example:</p> <ul style="list-style-type: none"> –"change can be positive and negative" –"change can be influenced"

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UNIVERSAL CONCEPTS SHOULD BE:

- Universal
- Timeless
- Equally useable across disciplines
- Appropriate for learners across age groups

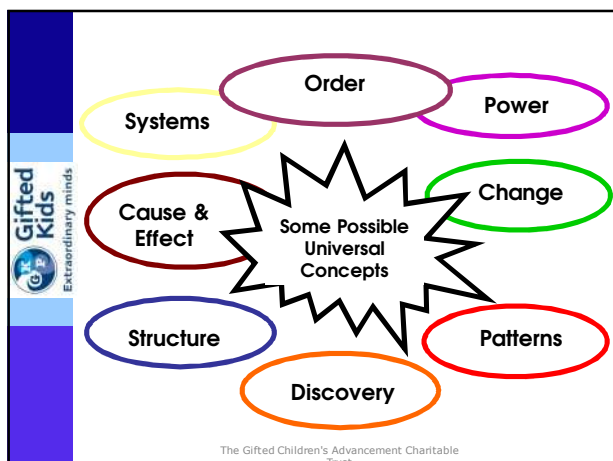
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Simple Concept	Complex Concept	Universal Concept
Increase in abstraction, complexity and sophistication →		
		Discovery
		Desert
		Change
		Early Settlers
		Exploration
		Antarctic
		Systems
		Environment
		Migration

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Simple Concept	Complex Concept	Universal Concept
Increase in abstraction, complexity and sophistication →		
Desert	Environment	Systems
Antarctic	Exploration	Discovery
Early Settlers	Migration	Change

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UNIVERSAL CONCEPTS

- maximise learning potential because they can be used in various content areas to allow students to see how and where their learning in 1 content area applies to another content area or situations.
- provide the greatest potential for connections to be made across all disciplines.

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HOW KNOWLEDGE IS STRUCTURED

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GENERALISATIONS

- Generalisations are statements related to the concept that will hold true across time and space.
- Generalizations are the basis of connections between disciplines.
- In making connections between seemingly disparate learning areas, students begin to form generalizations.

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SOME EXAMPLES

Patterns

1. Have segments that are repeated
2. Allow for prediction
3. Have eternal order
4. Are enablers

Systems

1. Are many parts arranged into a unified whole
2. A group of elements that work together
3. Are manmade or natural

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CHANGE

1. Change has cause and effect.
2. Change is inevitable.
3. Change occurs at different rates.
4. Change has varied impacts.
5. Change is revolutionary or evolutionary.

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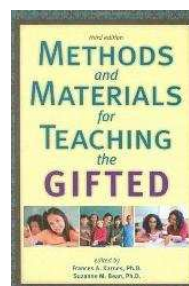
INTO PRACTICE

- Choosing contexts

Mind mapping

PLANNING THE UNIT

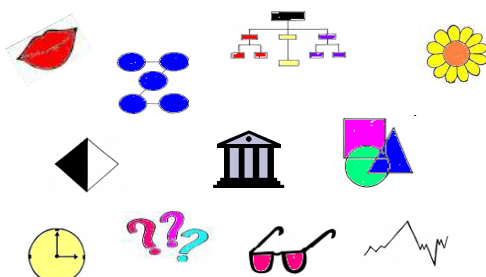
- Examples from



Writing
Learning Units
that Remove
the Learning
Ceiling

Roberts &
Roberts

DEPTH & COMPLEXITY



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DEPTH AND COMPLEXITY?

- How might you define these?
- What do you do to bring depth and complexity into your planning for your students?

THE PERSON BEHIND THE STRATEGY DEVELOPMENT



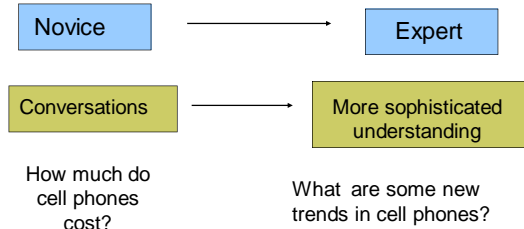
Dr. Sandra Kaplan

University South Carolina
Rossier School of Education
Gifted Education Training

Looking at people who are considered expert in their fields of work...

Translating what she finds to a set of teaching and learning strategies that can be used to lay the foundations for building expertise.

HOW DO YOU KNOW IF SOMEONE IS AN EXPERT?



KAPLAN'S DEPTH & COMPLEXITY FRAMEWORK

This framework was developed by educators in response to the question...

What content or knowledge distinguishes individuals who are expert in a field of study?

A very tangible way of reaching depth and complexity in CONTENT (i.e. what students learn about)

KAPLAN'S DEPTH & COMPLEXITY ICONS

Depth		Language of the Discipline
		Details
		Patterns
		Trends
		Rules
		Ethics
		Big Ideas
Complexity		Unanswered Questions
		Over Time
		Interdisciplinary Relationships
		Different Perspectives



Depth: Requires a student to uncover the detail about car parts and how they work.

Complexity: Requires a student to see the working relationships between the different parts.

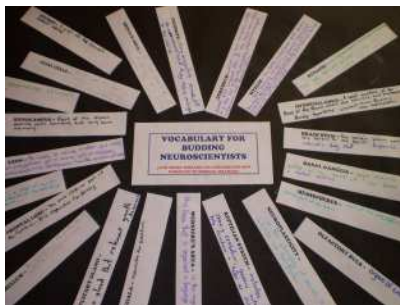
INTRODUCING THE ICONS TO YOUR CLASS

<http://www.youtube.com/watch?v=McEIdMETSnw&feature=relmfu>

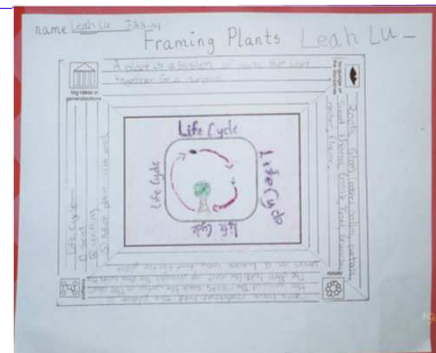
CLASSROOM EXAMPLES USING DEPTH AND COMPLEXITY



CLASSROOM EXAMPLES USING DEPTH AND COMPLEXITY



FRAME THE TOPIC – individual worksheet:



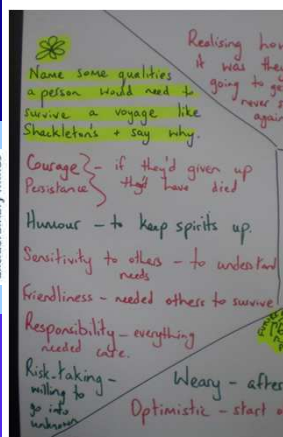
FRAME – THINK LIKE AN EXPLORER

Different questions to different groups. Share to fill frame.



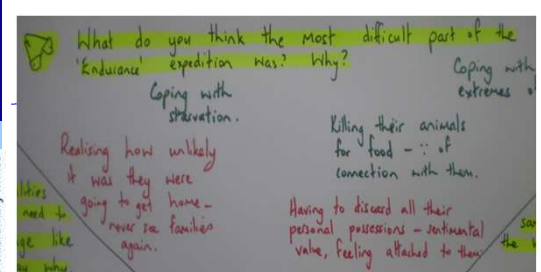
Details

Name some qualities a person would need to survive a voyage like Shackleton's and say why.



Different Perspectives

What do you think the most difficult part of the "Endurance" expedition was? Why?



Ethics

If you were in charge, would you have made the same decision to go to the whaling station? Why/why not?

Extremes of cold.

If you were in charge, would you have made the same decision to go to the whaling station? Why/why not?

Yes - only chance of rescuing crews, safe place with food, shelter...

Alternative was to wait for ice to melt - risks: ice melt takes too long - food would run out - starvation, ice melt happened fast - cracks in ice - men falling into water; flooding & drowning.

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Different Perspectives

Change over Time

How might the crew have felt as time passed during their Antarctic expedition? Use examples from the story.

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crossing Sth Georgia island expedition

Worried - when ship was cracking up.

Disappointment - when Huxley had to destroy photographic plates - 450 of them

Angry - when they had to ditch their belongings, on would reach McNeill when he had to kill his cat.

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What do you think the most difficult part of the Antarctic expedition must be?

Going with the extremes of cold.

Feeling lost with only a few days left.

Having to decide all their personal possessions - what to take, what to leave behind.

THINK LIKE AN EXPLORER

TRAPPED BY ICE!

Yes - only chance of rescuing crews, safe place with food, shelter.

Alternative was to wait for ice to melt - risks: ice melt takes too long - food would run out - starvation, ice melt happened fast - cracks in ice - men falling into water; flooding & drowning.

How might the crew have felt as time passed during their Antarctic expedition. Use examples from the story.

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Task menu

Investigate and Report on Animal Adaptations

DEPTH AND COMPLEXITY PICKER

Developing Depth and Complexity in your Knowledge Requires Work in these areas:		Activities to Choose...
Language of the Discipline	What vocabulary terms are specific to this area?	Find at least 10 words which relate to animal adaptations and find out what they mean. Publish your own dictionary of terms.
Details	What are the defining features?	Choose one animal and find out about its adaptations. Record what you learn in a multi-flow map.
Pattern	What elements recur?	Make a collage of camouflage patterns.
Ethics	What moral principles are involved in this subject?	Many species of animals are now endangered because of the things human beings do. What kinds of human activities contribute to endangerment of species? Whose needs should take priority - the animals or humans - and why? Write a report on these issues.
Big Ideas	What is the main idea?	Adaptation is a type of change. What are the main ideas involved in this type of change?
Across the Disciplines	How does this link to other areas?	Professionals from different fields are interested in how animals adapt. How might each of the following people contribute to work in studying animal adaptations - photographers, statisticians, map-makers, biologists, film-makers, environmentalists ... ?

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SOCIAL STUDIES UNIT: YR 9 - CONFLICT

DEPTH AND COMPLEXITY PICKER

Developing Depth and Complexity in your Knowledge Requires Work in these areas:		Activities to Choose...
Unanswered Questions	What information is unclear, missing, or unavailable?	Choose a major conflict from the past 50 years. Think like a historian and generate a list of questions you would wish to investigate.
Ethics	What moral principles are involved in this subject?	What are the ethical issues involved when countries go to war? How does war impact on human rights? Is there such a thing as a 'just war'? Delve deep into these questions and write a formal essay, give a speech, or make a visual presentation of some kind to show your thinking.
Big Idea	What is the main idea?	'Conflict' is the overarching concept or idea. What ideas form the pillars or contributors to conflict? Use the Big Ideas icon as a graphic organizer to record your thinking.
Across the Discipline	How does this link to other areas?	Investigate links between war and other fields of activity, eg scientific, technological, medical, economic, social organization (eg UN). Decide on your own method of presentation.
Change over Time	What about the past, present, and future?	Create a timeline of conflicts between nations or cultures over the past 150 years. Note the time, place, source of conflict, parties involved, resolution. Illustrate your timeline. Can you make any generalisations about conflict as a result of your research?
Different Perspectives	How would others see the situation differently?	Put yourself in the shoes of others. Use an OPV graphic organizer to record your thoughts on how the following people might have viewed the conflict in WWII: A British soldier A German mother whose son died in battle A black marketer A Jewish resistance fighter A child in London

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TO ENRICH READING COMPREHENSION: CHARACTER ANALYSIS

NEIL GAIMAN

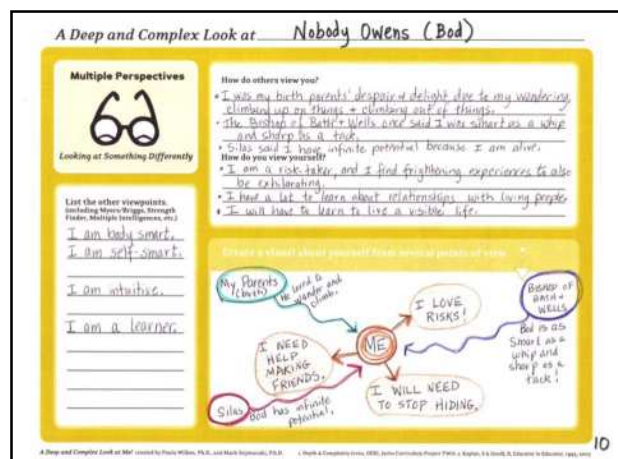
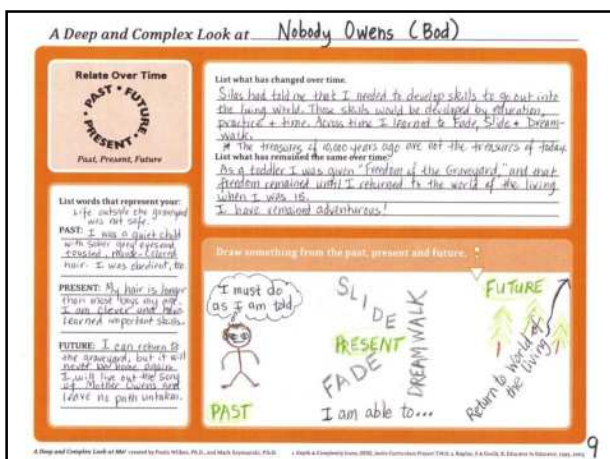
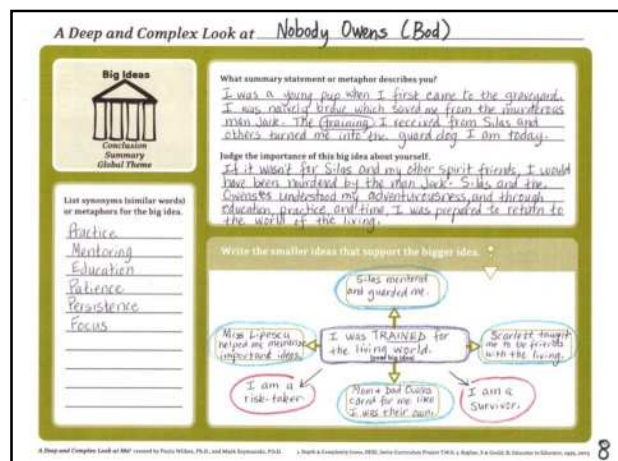
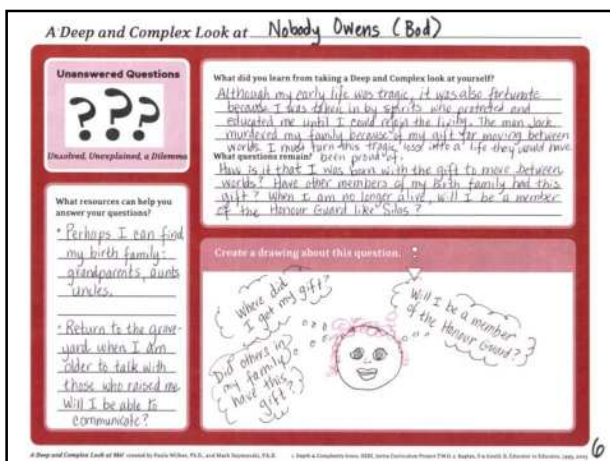
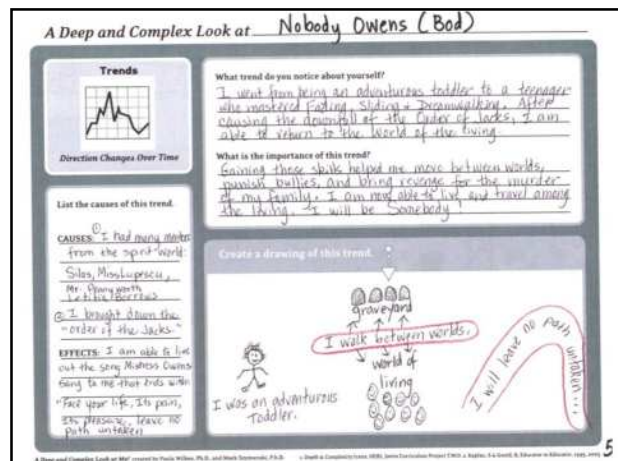
The Graveyard Book

NEIL GAIMAN

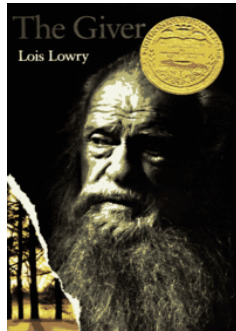
The Graveyard Book

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LOOK BOOKS



TO ENRICH READING COMPREHENSION: TEXT ANALYSIS



The Literature Response

Journal

Discovering Depth and Complexity in Literature

THIS NOTEBOOK BELONGS TO:

name: Paula's Sample

THE TITLE: The Giver

AUTHOR: Lois Lowry

Karen M. Timmerman, Ph.D. & Paula J. Wilcox, Ph.D.

Entry Points for Responding to Literature

- Language of the Discipline:**
Genre of the Story (Descriptive Language (Similes/Metaphors/Alliteration/Slang) Figures of Speech (Key Words/Rich Vocabulary, Words Specific to this Story) Words Have to Ma
- Details:**
Setting (Main Character/Plot/Distinguishing Traits (People) Places/Events (What Details are Most Important?)
- Patterns:**
Repetition/Order (Your Prediction Based on Past Events) Elements, Events or Ideas Repeated Over Time
- Rules:**
Organization of the Story/Writing Conventions (Rules Followed by the Characters/Facts/Guidelines
- Trends:**
Changes Over Time/Causes/Effects of the Change/Importance of the Change/Norms of the Time Period/Norms of the Culture
- Unanswered Questions:**
What are You Left Wondering?/Discrepancies/Unresolved Issues/Missing Parts/What Would You Ask the Author?
- Ethics:**
Controversies/Conflicts (Pros/Cons (Right and Wrong) Moral of the Story/Appropriateness of the Story for a Student Your Age
- Big Idea:**
Main Idea (Themes) More of the Story (Conclusions Based on Events) Judge the Importance of the Big Idea/Why do you Suspect the Author Wrote this Book?
- Relate Over Time:**
Past/Present/Future/What Changed?/What Remained the Same?/Compare/Contrast
- Multiple Perspectives:**
Offering Viewpoints of Characters/Who Would Enjoy this Book?/Why?/How Do You Rate this Book?/Why?
- Across Disciplines:**
This Story is Related to What Other Subjects?/Make Connections to: Other Stories, Personal Experiences, Other Media

Language of the Discipline

Create examples from the story in words and pictures.

- Opens with a "book": "It was almost December, and Jonas was beginning to be frightened."
- Conventions: Job titles and words on loudspeaker are capitalized.
- Language must be precise.
- community
 - learning community
 - family unit
 - assignment = aptitude
 - dwelling
 - discipline ward
- "Receiver" of Memory
- apartness - what Jonas felt as a Receiver-in-training
- A name "designated Not-to-be-Spoken" indicated the highest degree of disgrace (never use again for a newchild)
- citizen-in-training
- Sarcasm
• loudspeaker
• "perceived" - a new way of knowing
• climate control - no experience with snow or sunburn
• "Honor" not the same as "Power"
• Language is limited when describing feelings

Language of the Discipline

The Literature Response Journal

Karen Timmerman and Paula Wilcox

Patterns

Create examples from the story in words and pictures.

- Rituals**
- Feelings discussed after dinner
 - Dreams discussed in the morning
 - Chanting of morning anthems
 - December ceremonies (see Relate Over Time)
 - hair, clothing the same by age
- Jonas kept thinking his relationship with Asher wouldn't change.
- Jonas + The Giver rocking their bodies back a forth because of painful memories.
- When the ritual isn't followed - the community is uneasy (such as ceremony where Jonas' assignment wasn't given until the end)
- Apple changed four times (he began to see color)
- "the evening proceeded as all evenings did..."
- Actions repeated over and over seemed robotic. Jonas' clapping "an automatic, meaningless gesture that he wasn't even aware of."
- "Seeing beyond" - apple, Finn's hair
- One-generation marriages

Patterns

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Rules

Create examples from the story in words and pictures.

- Planes take-off away from the community. Pilot who makes a mistake is "released."
- Don't use talk of "release" as a way to tease.
- Public apologies required.
- Language must be precise.
- Adults don't argue.
- Not given a spouse if "they lacked, somehow, the essential capacity to connect to others."
- Two children to each family unit - one boy, one girl
- Transgressions - No third chance - simply released
- 50 named babies at "One Ceremony" (if none released)
- Application for a "One" must be approved.
- Birthmothers give birth to only three children and are laborers.
- Can't ride a bike until a Nine (this rule often broken).
- Every part of life regulated.
- Birthmothers never get to see their birth children.
- Don't complete required number of volunteer hours = not given assignment at Twelve
- * Rules were very hard to change.
- Except for Old and much older, may not look at others' nakedness
- Snacks eaten, not hoarded
- minor rules
• bragging
• rudeness

Rules

The Literature Response Journal

Karen Timmerman and Paula Wilcox

Unanswered Questions

Create examples from the story in words and pictures.

Why is it okay to break some rules, like use a sibling's bike before the bike ceremony?

How did this community begin? Why were the first members willing to give up their memories + "stirrings"?

Rules - who first created them?

Naming on Old woman - Larissa. Does everyone ^{wear} a nametag?

Once Jonas left the community, did the members he left behind regain the memories he had received?

Was Jonas now a name Not-to-be Spoken, or did all the rules change?

Did Lois Lowry think utopia was a good idea or a bad idea?

Was a snowy evening during the Christmas season one of the author's favorite memories?

How did they get to Sameness of skin color, and why was this important?

Unanswered Questions

Ethics

Create examples from the story in words and pictures.

Authenticity -- is the "standard apology phrase" authentic or robotic?

Sameness - standard response, acceptance, authentic or robotic?

Father broke rules and looked up name of Gabriel.

Taking a pill to prevent normal "stirrings"

"Releasing" a smaller twin so the rule of 50 is followed.

"Releasing" an "inadequate" mischild

What is given up:

- Stirrings
- Giving birth
- Making own decisions about work + marriage

Fritz (a Nine) who "infringed on the community's sense of order"

Members of Community don't understand what it means to be released to Sameness

How does the need for sameness relate to "ethnic-cleansing" we've seen across time and cultures?

Ethics

Big Idea

Create examples from the story in words and pictures.

- * Caring is the meaning of everything.
- * A life without feelings + memories is a life without love or meaning.
- * Ignorance is bliss.
- * Emotional pain may be more difficult to survive than physical pain.
- * A utopian society requires many rules.
- * Love is the greatest feeling.
- * The gaining of memory, feeling, understanding also brought loss of childhood, friendship, confide sense of security.
- * Fill your life with positive memories. They need to be shared.

Big Idea

Across Disciplines

Create examples from the story in words and pictures.

Psychology - impact of memories and feelings

Sociology - pros and cons of a utopian society

Visualization - to recall and create images + impact feelings

Science/Environmentalism - Climate control; population control

Education - what children should know and how they should behave.

Connection to my life - my brother's "release" through self-injection

Across Disciplines

Intellectual Intersection

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Diagram showing intersections of various symbols: a diamond, a network of blue circles, a line graph, a circular arrow, and a question mark.

INTELLECTUAL PATHWAY


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For each student, create an **individual** Intellectual Pathway to a product.

Student A: Flower, Dots, Diamond, Circular Arrow, Building

Student B: Lips, Flower, Flower, Flower

Student C: Question Marks, Flower, Diamond, Gears, Building



FINAL THOUGHTS

The surest path to positive self esteem is to succeed at something which one perceived would be difficult.

Each time we steal a student's struggle, we steal the opportunity for them to build self-confidence.

They must learn to do hard things to feel good about themselves."

- Sylvia Rimm (*When Gifted Students Underachieve*)