



INTERDISCIPLINARY THINKING FOR SCHOOLS: **ETHICAL DILEMMAS**

MYP 1, 2 & 3

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Introduction

Interdisciplinary Thinking for Schools: Ethical Dilemmas MYP 1, 2 & 3 is a user-friendly, interdisciplinary guide for teaching and learning written by two experienced teachers of International Baccalaureate Middle Year Programme Design. We value the work of teachers and acknowledge the pressures they face to write relevant and new curriculum. This book evolved due to the lack of available teaching resources that met our students' holistic needs. It aims to give teachers pathways to connect students to exciting and purposeful learning that uses creativity, deep thinking and exploration of embedded ethical dilemmas. We have rich and complex content and hope teachers will use what they need in a flexible way. In these challenging times, when the whole world and our schools have changed due to the global pandemic and new strategies for teaching and learning will need to emerge, all the content can be used for online learning.

In our teaching practice, we observed a higher level of interest and engagement when students used an ethical lens to explore real world, design dilemmas in our units. Many of the choices students made in connection to their community, personal projects and extended essay topics were impacted by their experience of this curriculum.

Our approach advocates respect for oneself, the community and the world to use and view design in different contexts with all MYP subjects.

In this guide we have developed ethical design projects that encourage critical thinking to support the growth of an innovative and student-centered curriculum to generate real world, sustainable solutions to problems in keeping with the IB philosophy. Each chapter explores the content through a specific ethical value, such as courage and kindness. These human qualities elicit an emotional connection to the content:

teachers know that emotion drives attention and attention drives learning. A vital part of our research process has been to interview creative experts who have been generous with both their stories and their time. Their support of this project has added a rich layer of primary research for the students.

We have used and adapted the International Baccalaureate MYP curriculum frameworks and interdisciplinary unit planners together with devices such as the Thinking Generator® and the Inquiry Creator Tool® to support critical thinking, innovation and a mindful approach through interdisciplinary inquiry. Many artists have graciously allowed us to use their work to illustrate our concepts and ideas and their artworks have enriched our book enormously.

Collaboration was key to our teaching and has been key to our writing. Sara is a practicing ethical visual artist and exhibits internationally. Meredith is an adjunct professor delivering on site and online courses for State University of New York at Buffalo (International Graduate Program for Educators) and consults for Core 21 Education Services. Consequently, our commitment to this project has meant that on most days we have worked together by using video conferencing. Together we have formed HK Educational Consultants and would be happy to visit your school and collaborate with your teachers.

We would like to thank our families, friends, students, colleagues, creative experts and our publisher and editors for their support, encouragement and feedback.

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How to use this book

The book uses the MYP Design Cycle and MYP Inquiry Cycle to guide student learning.

- Content includes unit planners, ethical dilemmas, graphic organizers, extension activities, student samples of work, formative and summative evaluations, pre and post skill tests, peer reviews, rubrics, self-evaluation, checklists, techniques and ideas and interviews from experts.
- The curriculum is differentiated and includes activities for students to use their mother tongue.
- Teachers can use and adapt the format of the graphic organizers for different topics.
- All these resources will help teachers to support student understanding needed for the online examinations. Students can also refer to online resources such as TED talks, Google talks, etc.

Ethical dilemma

The ethical dilemma equation in each chapter shows how an ethical value can be used to support interdisciplinary understanding. For example in the chapter on courage and space transport, the interdisciplinary ethical dilemma of “expansion to the stars versus staying on the earth” can be shown in the table below:

ETHICAL VALUE	+ REAL WORLD INQUIRY	+ INTERDISCIPLINARY SKILLS	= PURPOSEFUL IMPACT
COURAGE	EXPANSION	TRANSPORT DESIGN FORCES	= SOLVING PROBLEMS OF THE FUTURE

COURAGE + EXPANSION + TRANSPORT DESIGN FORCES = SOLVING PROBLEMS OF THE FUTURE

The equation shows how an ethical value can be used with design to solve the design problem.

Students can use this to write their own equations and ethical dilemmas.

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(Image courtesy of Museum of Modern Art Heide, Australia)

Each unit has three main sections:

1. Overview and content

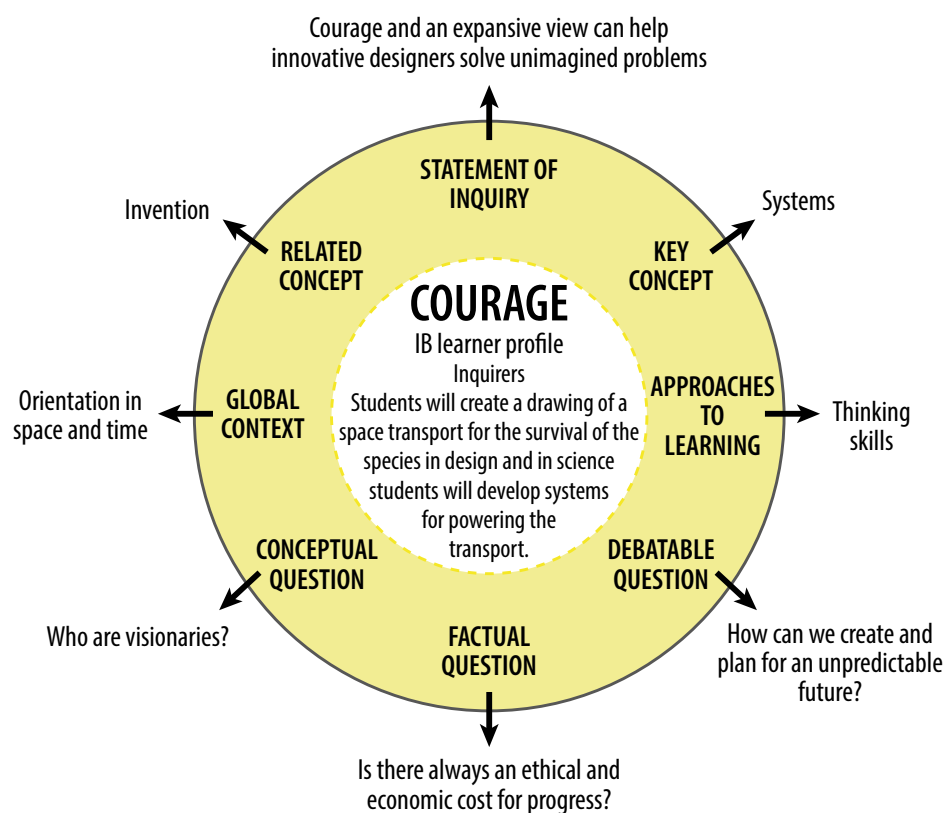
2. How will you use the MYP philosophy?

- i) Unit planner (adapted from IBO)
- ii) MYP terms (IBO)
- iii) MYP Interdisciplinary criteria (IBO) teacher checklist

3. Expert interviews

Overview and content:

- Links for interdisciplinary learning
- Year level
- Purpose of integration
- Summative task
- MYP statement of inquiry
- Ethical dilemma
- Global context
- Approaches to Learning (ATL) skills
- IB learner profile
- Means of differentiation (with reference to the Lyn Erickson model via product, process, interest and content)
- Developing critical thinking strategies
- Suggestions for class discussions
- Disciplinary and interdisciplinary learning experiences
- Student samples of work
- Case studies



How will you use the MYP philosophy?

In this section, teachers have all the planning tools to deliver the curriculum. Unit planners provide all the information teachers will need to facilitate and support student learning. These are linked to checklists of interdisciplinary criterion ABC and D for teachers of student progress and assessment strategies.

The diagram shows all aspects of the MYP curriculum framework in a visual format (adapted from IBO).

Expert interviews:

Complete interviews and biographies of our experts are at the end of each chapter. Insights from these interviews can inspire students to recognize the power of design to impact human behavior, and to understand they too can be agents for change.

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Happy Day in the Mountains, 2018, Chen Li, 100 x 130 cm
(Courtesy of the artist and Katrine Levin Galleries)

The importance of flow in the MYP

The concept of 'flow' described by Mihaly Csikszentmihalyi is a highly focused state of awareness when nothing else matters, and has influenced the structure and content of our book. Through the exploration of ethical dilemmas, we would like to support students in reaching that state of engagement with their learning. As a starting point, students can explore the Thinking Generator®, the first step of which requires students to ask themselves, "Am I mindful of the task at hand?"

Students need an emotional response to engage with their learning; one strategy is to use the power of student agency. This gives students greater choice and voice in how learning is guided through meaningful activities that can be initiated through their interests. The concept of flow can support non-linear thinking, student agency and fuller engagement with the MYP inquiry and design cycles. When students achieve the feeling of flow, time passes and deep learning and creative responses often occur.



Different experiences of flow:

We asked some of our experts to share their experiences of being in the *flow*. The first female, Omani Youth Olympic swimmer, Lara Al-Yafei commented, that when she swims, “for the first five minutes it may be boring, but as time goes on you get into the flow and then that’s when you really enjoy it. You need a challenge as well to get into the flow.”

Speaking about his life choices, digital designer Adrian Bruch mentioned: “Some people have visions about where they want to go, others just are fortunate enough to flow and go and take opportunities as they come to them.”

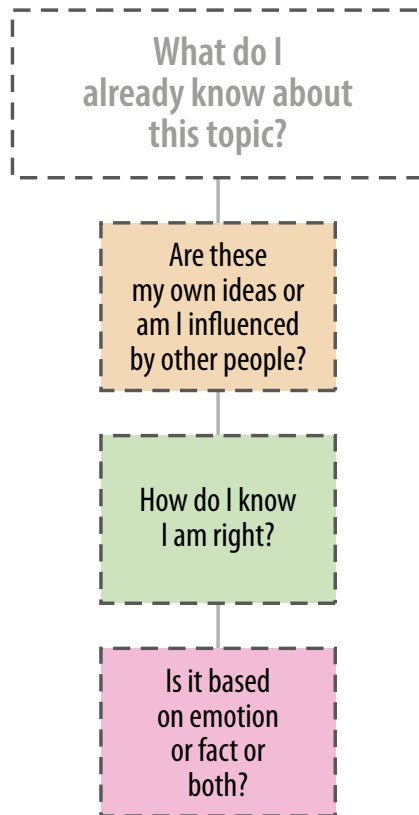
Illustrator and visual effects designer Lucy Wisada reflected that, for her, “being in the flow means not having to consciously think about your actions. As you hold your pen, it’s like your hand moves by itself and the lines place themselves on your canvas as if they were always meant to exist in that position.”

Educator Renee Gross-Zylbersztajn said, “I’m inspired to immerse oneself in nature; to play, to narrate, navigate puddles and explore the raindrops on the leaves as well as appreciate the light reaching through the branches as it starts to break through the clouds – then, and only then am I ready to actually draw what I see. These experiences and more, create a wonderful foundation of concentration and the power to focus attention. With this mindset I create a welcome space for failed attempts and positive creativity.”

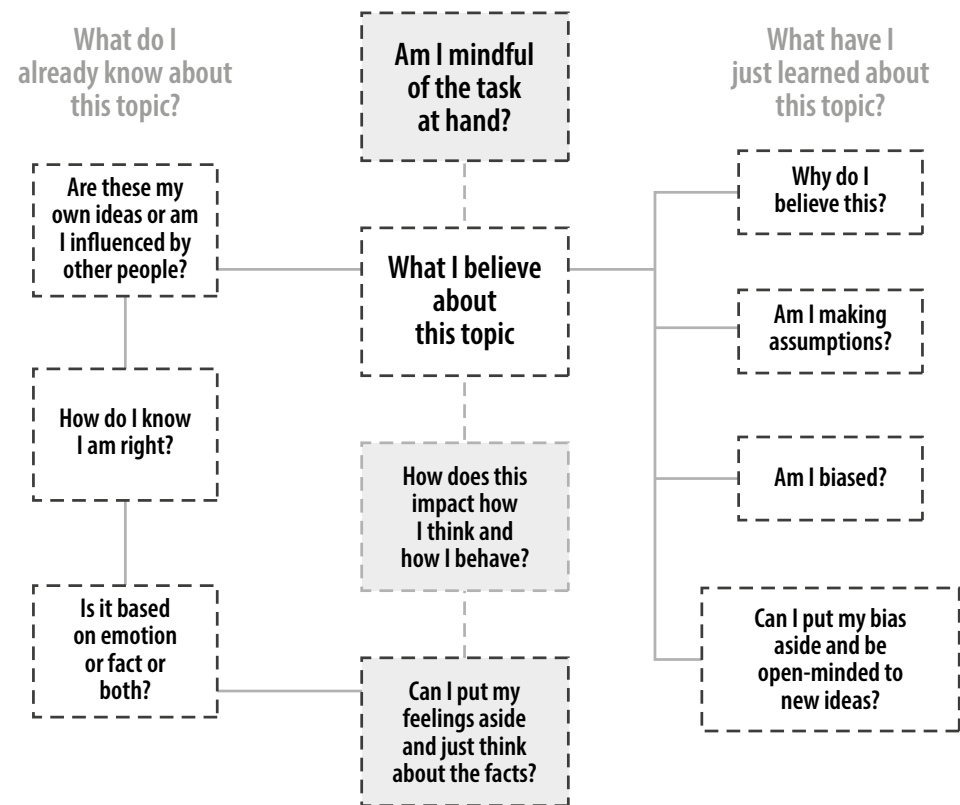
Teachers can ask students about their own experiences, have they felt a sense of flow, complete absorption, e.g. when did time go fast for you?

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We would like to draw attention to the strategies developed in this book to help both students and teachers use critical thinking (e.g. different versions of the Thinking Generator® below). These strategies can be adapted by teachers for different units.



MYP 1



MYP 2,3,4 & 5

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Safety reminder

Teachers need to remember when students are involved with practical activities that classroom management and understanding of materials (dangers and consequences) need to be adhered to ensure everyone is safe in the learning environment. Make sure you check allergies – we often think of nut allergies but some students might be allergic to paint or dust for example. Is there adequate ventilation to maintain air flow? Are any of the materials toxic? Remember to check recycled goods also.

Can your students safely handle tools and lab equipment? Another reminder is to explain what is a safe distance to be standing when using tools and machinery and also how to be respectful of personal space and the people around you. Students and teachers need to be reminded that individuals respond differently to how much personal space gives them comfort, so be aware and give them the space they need.

Academic honesty

Teachers should encourage students to follow the IB guidelines for citations and explain the reasons why it is so valuable to avoid plagiarism. Collaboration and synthesizing through interdisciplinary learning, ethical dilemma exploration and learning from real life experiences, will give an opportunity for a deep and meaningful education. We hope this publication will inspire educators to try to explore our different approaches and use these to impact classroom practice.

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Children from St Albans Heights Primary School showing their excitement with the newly harvested gourds (Image courtesy of SAKGF)

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Chapter 1: Wisdom

Year MYP 1 & 2

Interdisciplinary unit:

This unit explores the wisdom and knowledge that indigenous or local cultures have developed through growing and gathering food. This information can be helpful in designing a space which supports a sense of community. The link for interdisciplinary learning is the investigation about growing edible plants. Students will synthesize skills and interdisciplinary understanding from both subjects to address the summative task. Teachers should keep in mind the local, seasonal and cultural conditions for growing edible plants.

MYP statement of inquiry:

Sustainable, edible gardens can help students develop a sense of responsibility for the self, the community and the environment.

Interdisciplinary link: Science

Possible links: Individuals and societies and visual arts

IB learner profile: Balanced

**WISDOM + MINDFULNESS + GARDEN DESIGN = REPURPOSING SPACE AND
PHOTOSYNTHESIS DEVELOPING COMMUNITY**

The equation shows how an ethical value can be used with design to solve the design problem.

Students can use this to write their own equations and ethical dilemmas.

Ethical dilemma: What are the ethical problems when growing food?

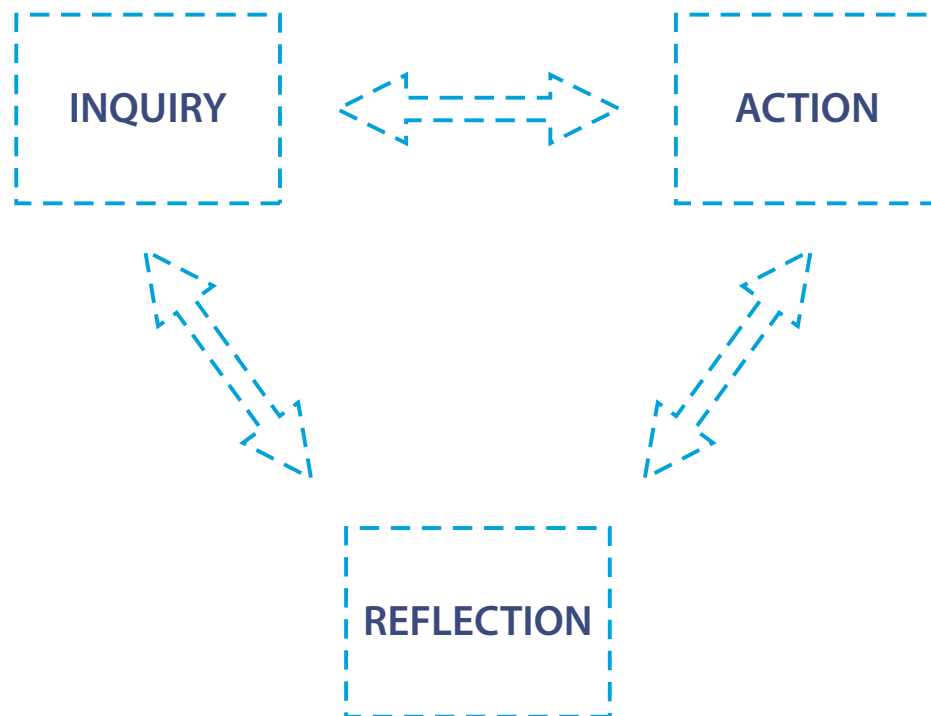
You don't always need to make a choice in ethical dilemmas, this dilemma explores how far an idea can go before it changes from right to wrong.

Summative task: Garden design and garden journal OR labels and garden journal (digital or hand drawn)

Results from the scientific investigations will support students in creating their garden projects. The garden journal will include information about photosynthesis, data on soil testing and sun tracking as well as the garden designs.

Differentiation: Via student interest, product and group work. The garden journal can be digital or drawn by hand.

ATL: Self management, affective skills and managing state of mind and using mindfulness strategies.



STUDENT TASKS

Students will design their edible garden and make weatherproof labels for their plants, which can be grown in pots or in water.

Where possible the labels should include indigenous names and labels for the languages spoken for the local area.

**O
R**

Students will redesign and make an existing space for their school into an outdoor community space which includes an edible kitchen garden and seating.

All students
will use a garden journal to record their work

The MYP Inquiry Cycle (adapted from IBO)

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Student example by Oliver Lee, MYP 1



Student example MYP 2

My recycled ping-pong paddle label has a light background with brighter colours for contrast.

Tamarind is used as a marinade in Oman and in curries, sauces and jams throughout the world.



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Dandelion, 2005, Jade Xia, oil, 18 inches x 18 inches

Increasingly, a modern, urban lifestyle has disconnected people from nature. Many families live in houses with small gardens or apartments, where they do not have their own garden. Changes in society and culture have also affected the use of language about the natural world. One example of this is illustrated by the author, Robert Macfarlane. He observed that, in 2007 the Oxford Junior Dictionary removed words such as bluebell, buttercup, kingfisher, otter and willow and introduced blog, broad-band, celebrity and voice-mail (Macfarlane, 2015a).

“We should be unsurprised that nature’s names are vanishing from children’s mouths and minds’ eyes, for nature itself is vanishing. We are presently living through the sixth great extinction – a speed and scale of planetary biodiversity loss not seen since the Cretaceous.” (Macfarlane, 2015b)

If you aren’t looking at nature and using words for nature how will you learn from it?

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Warm-up activity

Exemplar project on mindful observation

Renee Gross-Zylbersztajn, MYP 2 Visual Arts, Design and Media teacher – South Oakleigh College, June 2019

Let's draw a tree

How can you describe a tree to someone blind? This question inspired me to actually look deeper into my already mindful observation lesson. How can you teach someone to observe? The task is multifaceted and complex, especially for a 12 year old whose mind is racing with thoughts and are not aware of where to look, what to look for and how to identify how to start.

Students were set the task to go and explore nature outside the classroom. "But it's an art class, aren't we supposed to draw?" We spoke about what we were going to see, how we were going to translate what we saw to paper, and then how we were going to display our findings. "But Miss, 'findings', that's science." Consider da Vinci who often was thought to be the first true scientist, yet most people remember him for his artwork.



We use our seven senses to explore what is around us and to inform our desire to understand the world. So, all I could do was agree with my students, why is art not a part of science when sciences very much inspire art. As artists it's our responsibility to explore how our eyes work together with our brains and hands to translate what we see.

But what are we looking for in mindful observation?

What "ingredients" can we observe in our subject matter?

Before we moved our bodies out of the classroom, we wanted to observe a picture of a tree, in fact we looked at many trees. We all chose one tree to visually dissect; building our observational skill set. We all practised to create a frame with our fingers and the application of one point perspective drawing, understanding where we would have to place a horizon line on our page. This helped to observe what would go above our eye line and what we would need to draw below it. The students all agreed that if we moved our hands, the frame, the image and the placement of objects would change; Ludwig Wittgenstein calls this "aspect drawing", an "ah-ha" moment, the experience of being jolted into appreciating a new aspect of something you once thought you knew.

– Grade 7 students, South Oakleigh Secondary College

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Melbourne Nature Play – facilitated by Vanessa Janover
(Image courtesy of Courtney Winter-Peters)

The density and sprawling leaves of the crown, the length and width of the trunk, the texture and colors of the leaves and the bark. Can we see the roots of the tree? We know they are there, drinking up all the nutrients from the ground, but are they pushing through the earth, or in our case the car park? How does the tree meet the ground, are their fallen leaves, is there enough sunshine for a shadow to form? How far away are we sitting and does that make a difference to your image?

This activity lends itself to being introduced at an early age and continued throughout one's education. The activity is great for all ages. Both my one and two-year-old daughter's love to observe through touch and feel as they listen to the descriptions being narrated to them.

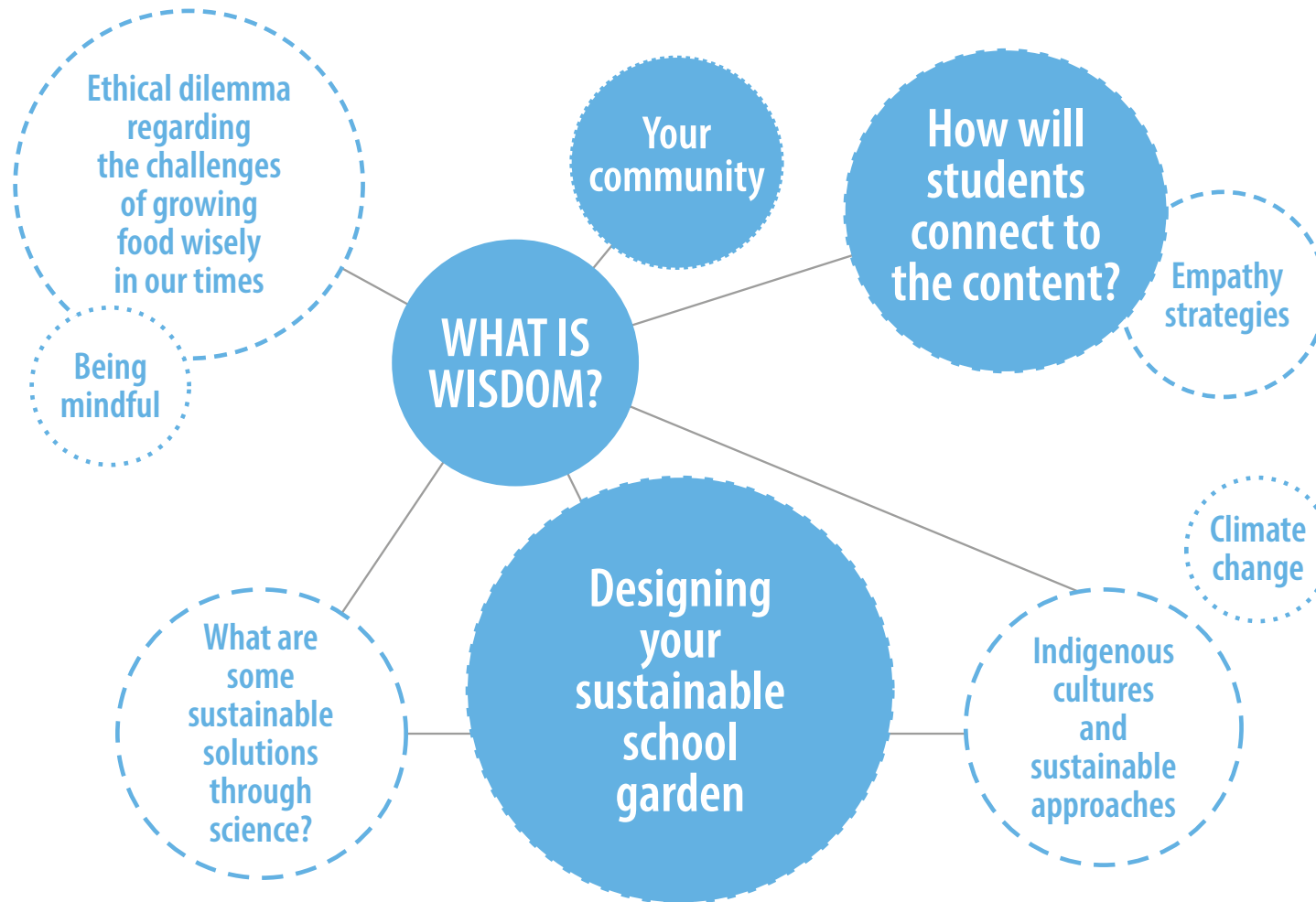
Though the task was designed for MYP levels 1 and 2, I'm reminded to stop, think, look, really see and smell the roses and the eucalyptus.

I'm inspired to immerse oneself in nature; to play, to narrate, navigate puddles and explore the raindrops on the leaves as well as appreciate the light reaching through the branches as it starts to break through the clouds – then, and only then am I ready to actually draw what I see. These experiences and more, create a wonderful foundation of concentration and the power to focus attention. With this mindset I create a welcome space for failed attempts and positive creativity.

(Gross-Zylbersztajn, R. Personal communication, June 24, 2019)

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What are students exploring?



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What is wisdom?

“The quality of having experience, knowledge, and good judgement; the quality of being wise.” – (Oxford Dictionary, 2018)

Students can consider which other ethical values overlap with wisdom, e.g. do you need to be respectful to be wise?

Students will explore human relationships to nature and sustainable ways of growing food. They will define terms such as **wisdom, sustainability, community, indigenous culture, ethical dilemma** and **climate change**.

Students can experience how creating sustainable, edible gardens can develop a sense of responsibility for the self, the community and the environment.

Students will research and develop their knowledge of innovative land management and scientific practices in the field of growing food. Students will also explore the wealth of knowledge, developed in indigenous cultures over time through experience.

We live in a multicultural world and this unit gives students a mechanism to embrace and learn from their different backgrounds and cultures. Schools can offer opportunities for local communities to be involved with projects that foster a hands-on approach to growing.

Interdisciplinary Thinking for Schools: Ethical Dilemmas MYP 1, 2 & 3 is not your average textbook resource. Innovative ethical design projects illustrated with spectacular artwork will connect students to exciting and purposeful learning. Rich primary research includes interviews with the following visionaries: Alberto Alessi, Astronomer Royal Martin Rees, Dr. Jane Goodall, Jared Della Valle and the Stephanie Alexander Kitchen Garden Foundation.

The interdisciplinary units have been written with a focus on creativity, critical thinking and exploration of embedded ethical dilemmas. Our strategies support the growth of an innovative and student-centered curriculum to generate real world, sustainable solutions to problems in keeping with the IB Middle Years Programme philosophy.

The authors, Dr. Meredith J Harbord and Sara Riaz Khan, are two experienced MYP design teachers whose approach advocates respect for oneself, the community and the world.



 **JOHN CATT**
FROM HODDER EDUCATION