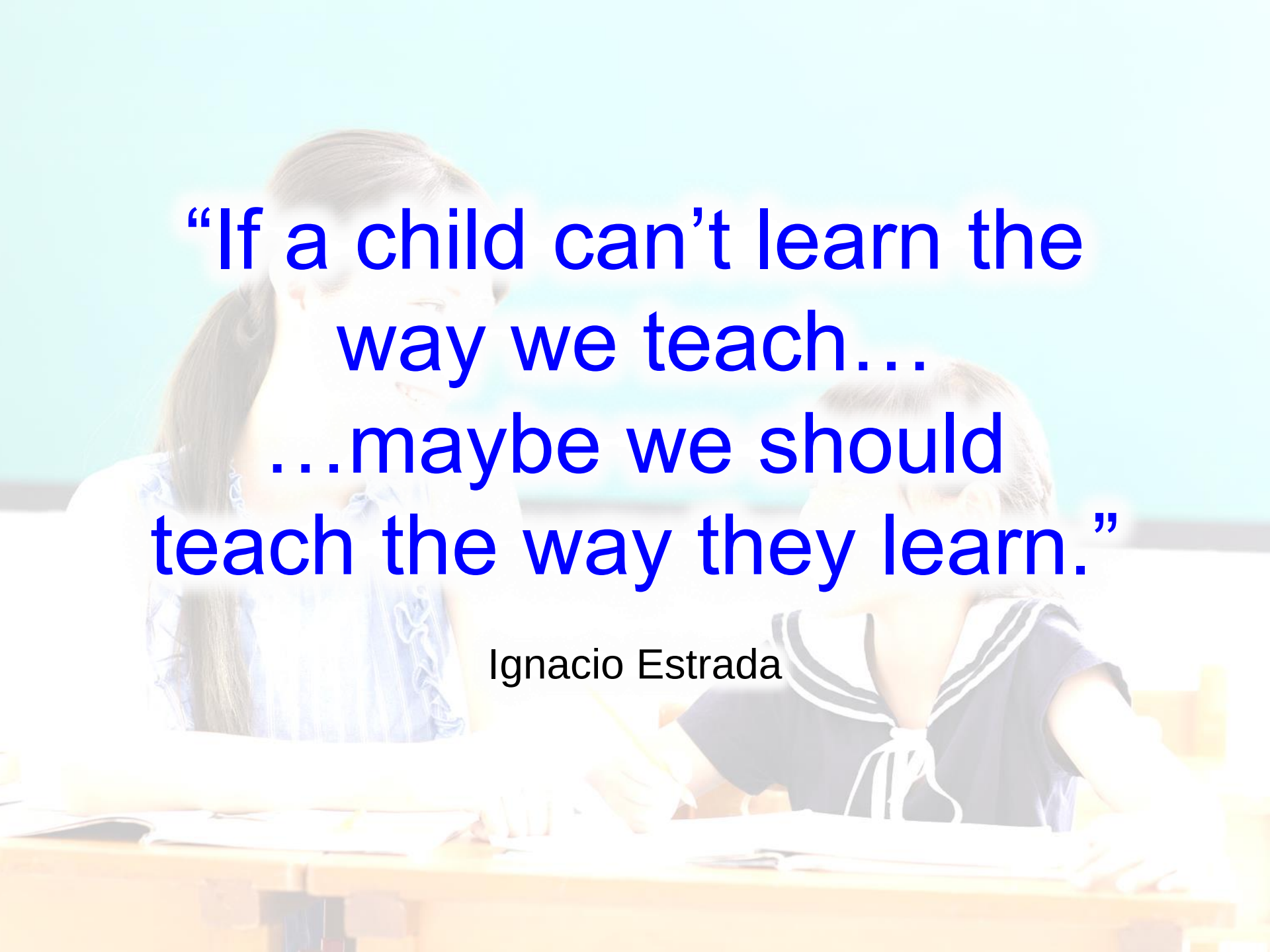


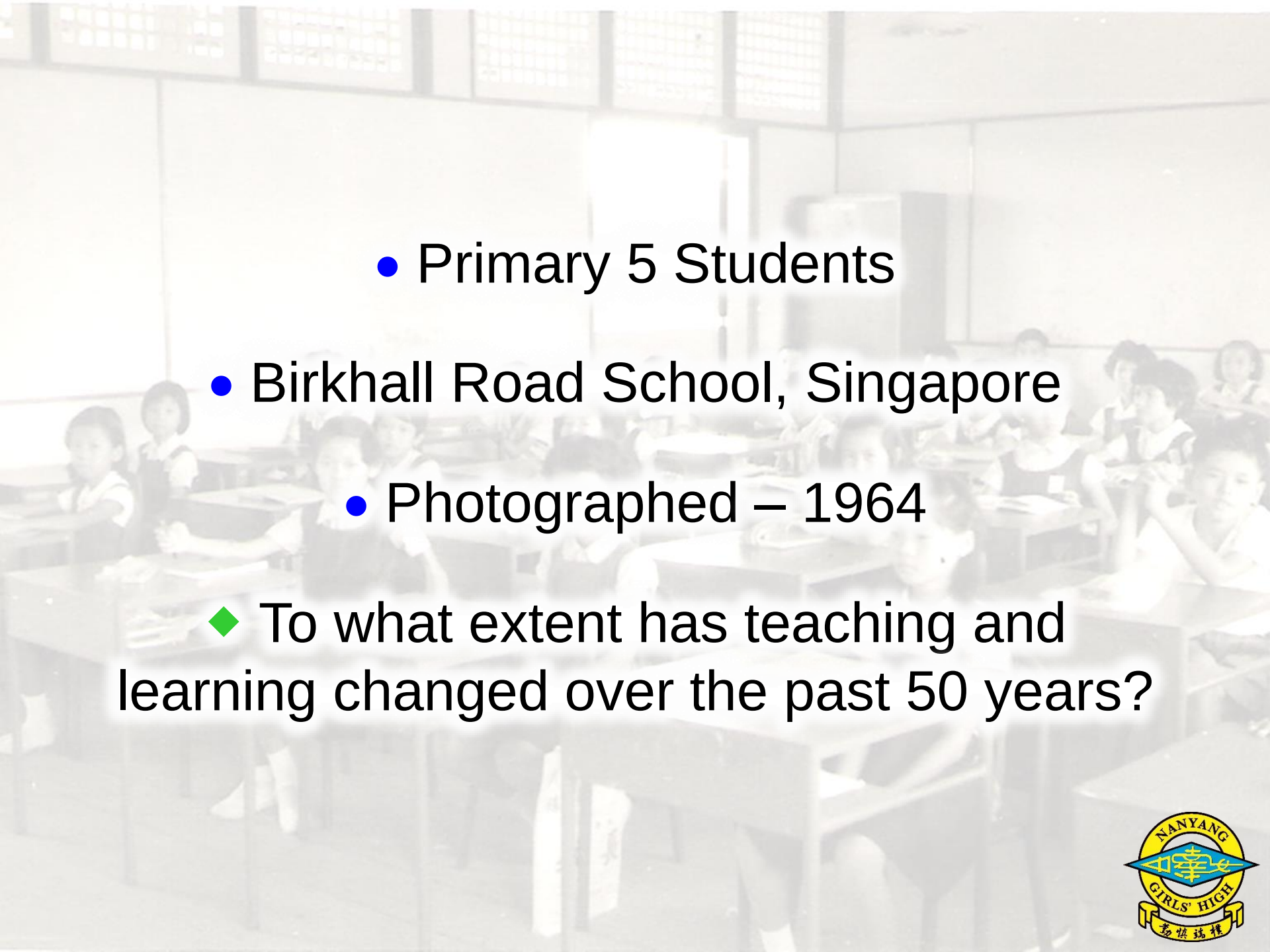
“If a child can’t learn the way we teach…
…maybe we should teach the way they learn.”

Ignacio Estrada

The Differentiated Classroom

Contents


NANYANG
GIRLS' HIGH



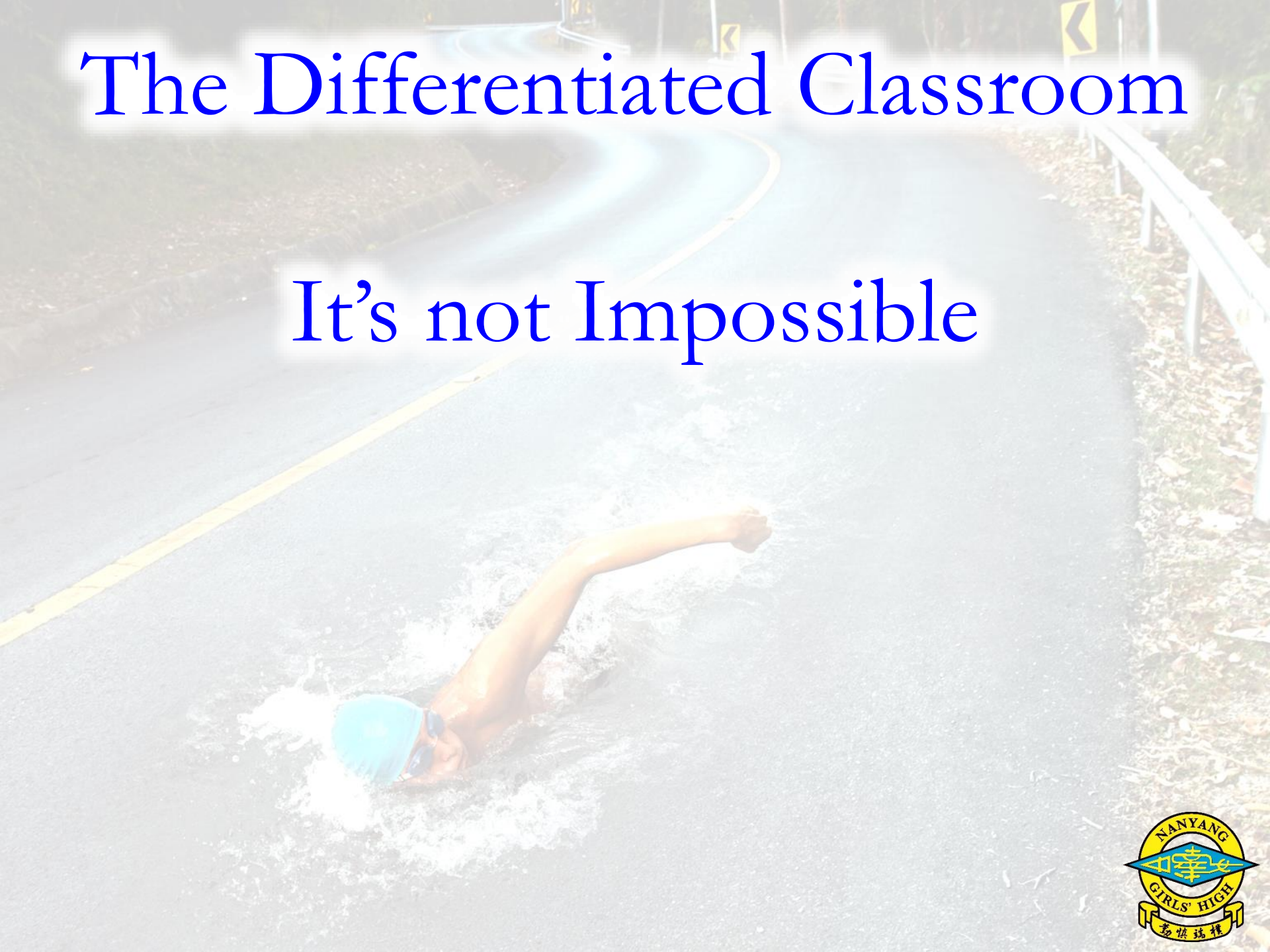
- Primary 5 Students
- Birkhall Road School, Singapore
- Photographed – 1964

◆ To what extent has teaching and learning changed over the past 50 years?


NANYANG
GIRLS' HIGH

The Differentiated Classroom

It's not Impossible



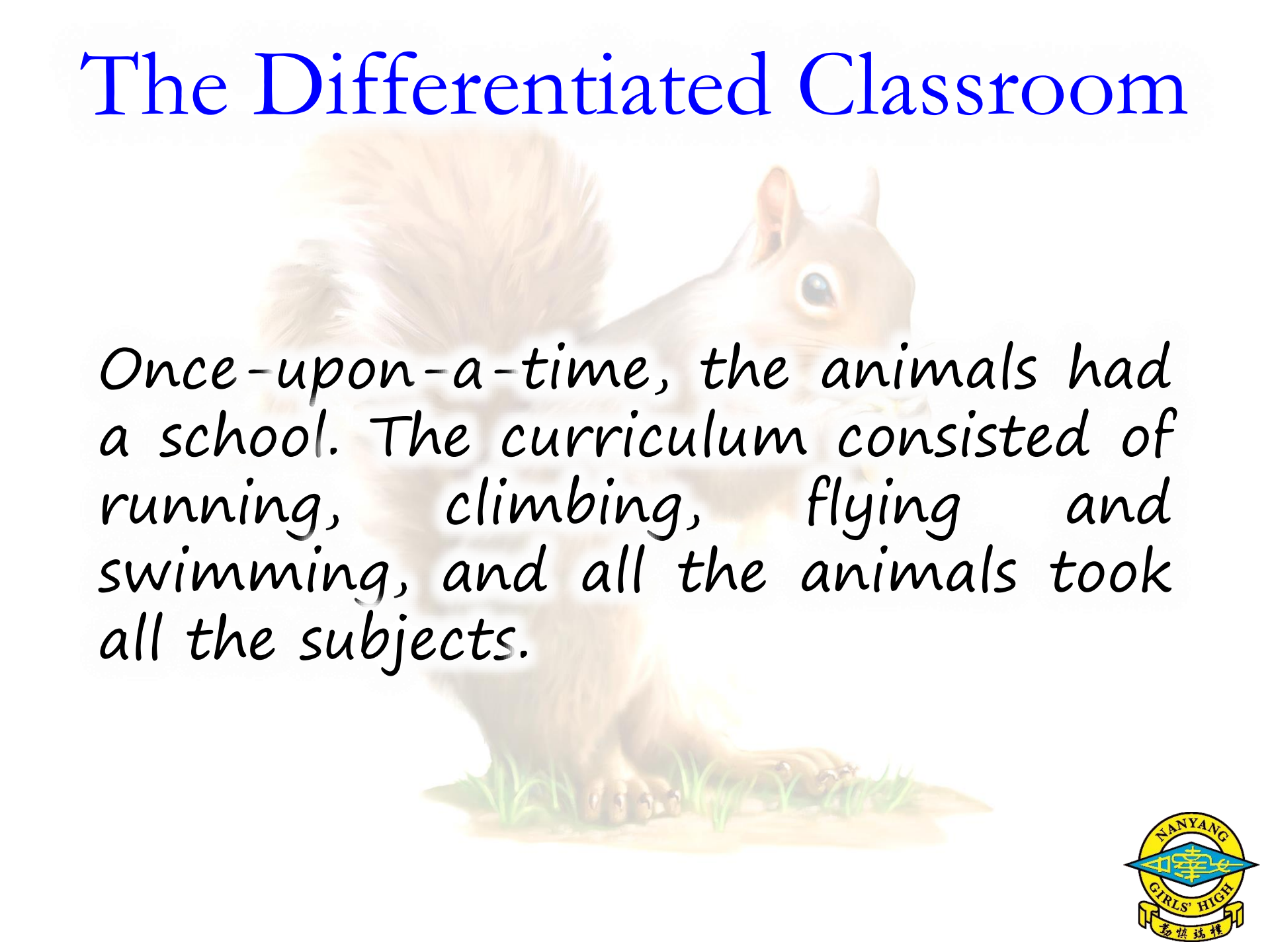
The Differentiated Classroom

Why differentiated instruction?

The Differentiated Classroom

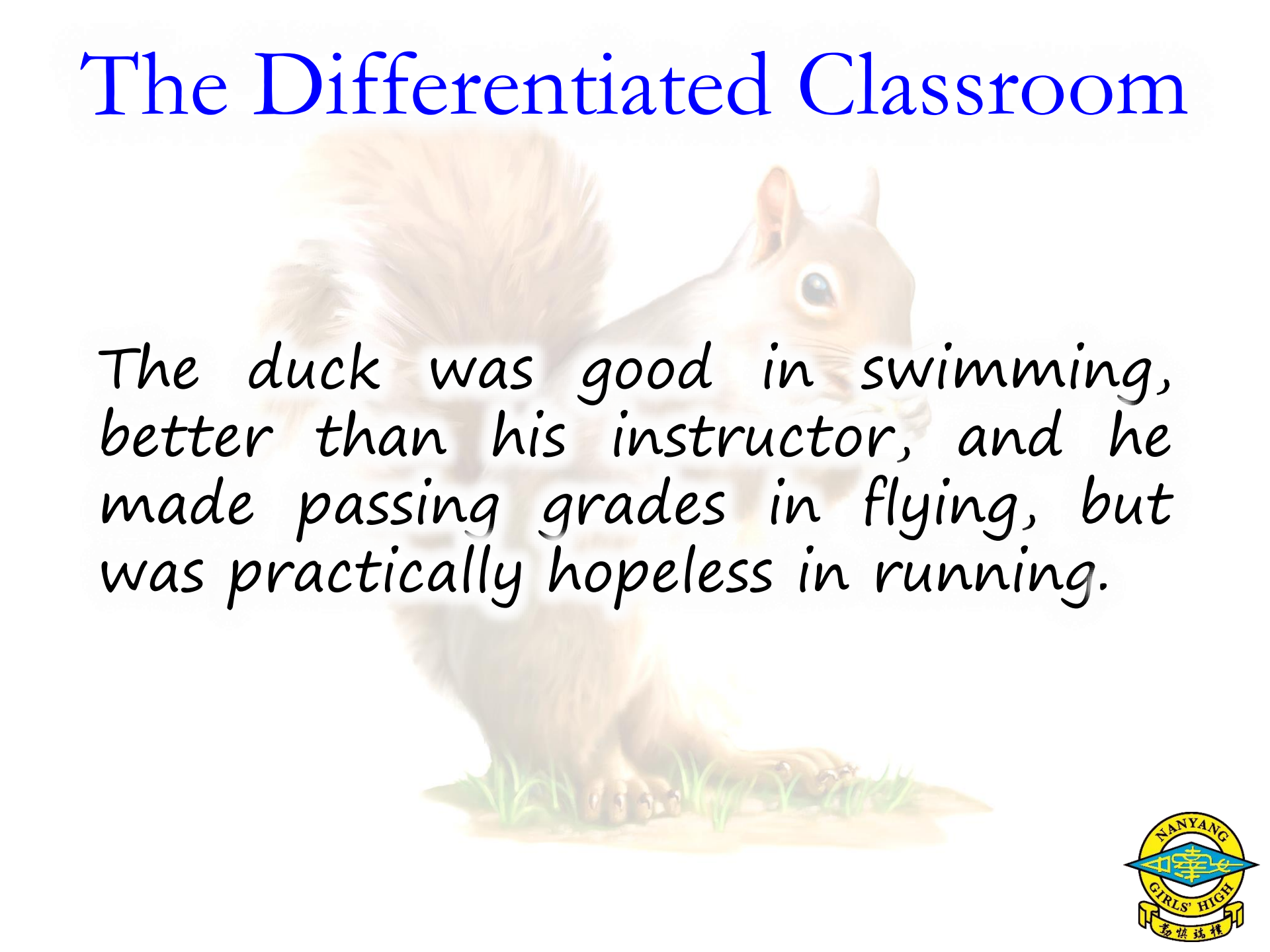
A Fable

The Differentiated Classroom



Once-upon-a-time, the animals had a school. The curriculum consisted of running, climbing, flying and swimming, and all the animals took all the subjects.

The Differentiated Classroom



The duck was good in swimming, better than his instructor, and he made passing grades in flying, but was practically hopeless in running.

The Differentiated Classroom

He was made to stay after school and drop his swimming class in order to practice running. He kept this up until he was only average in swimming. But, average is acceptable, so nobody worried about that but the duck.

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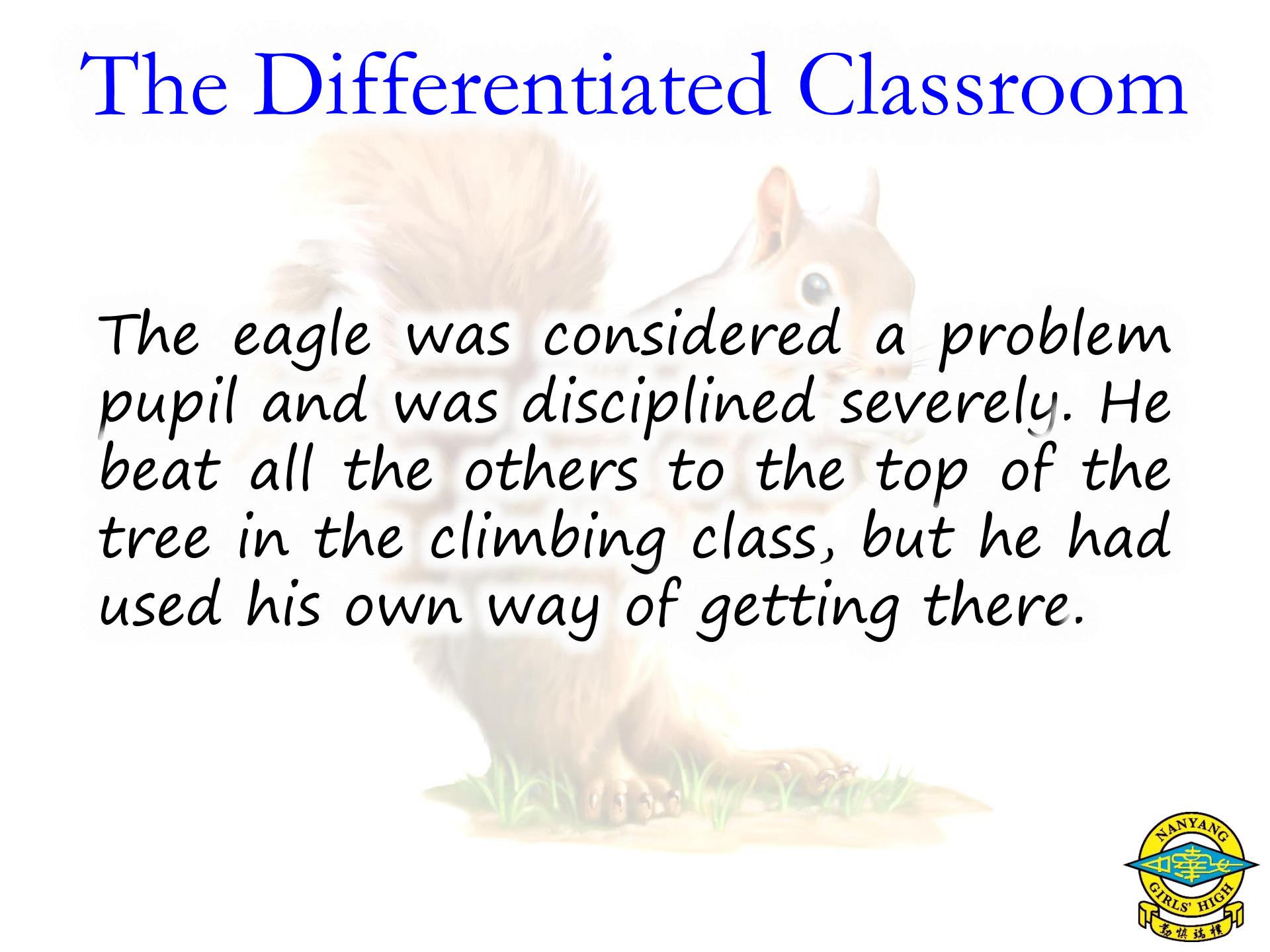
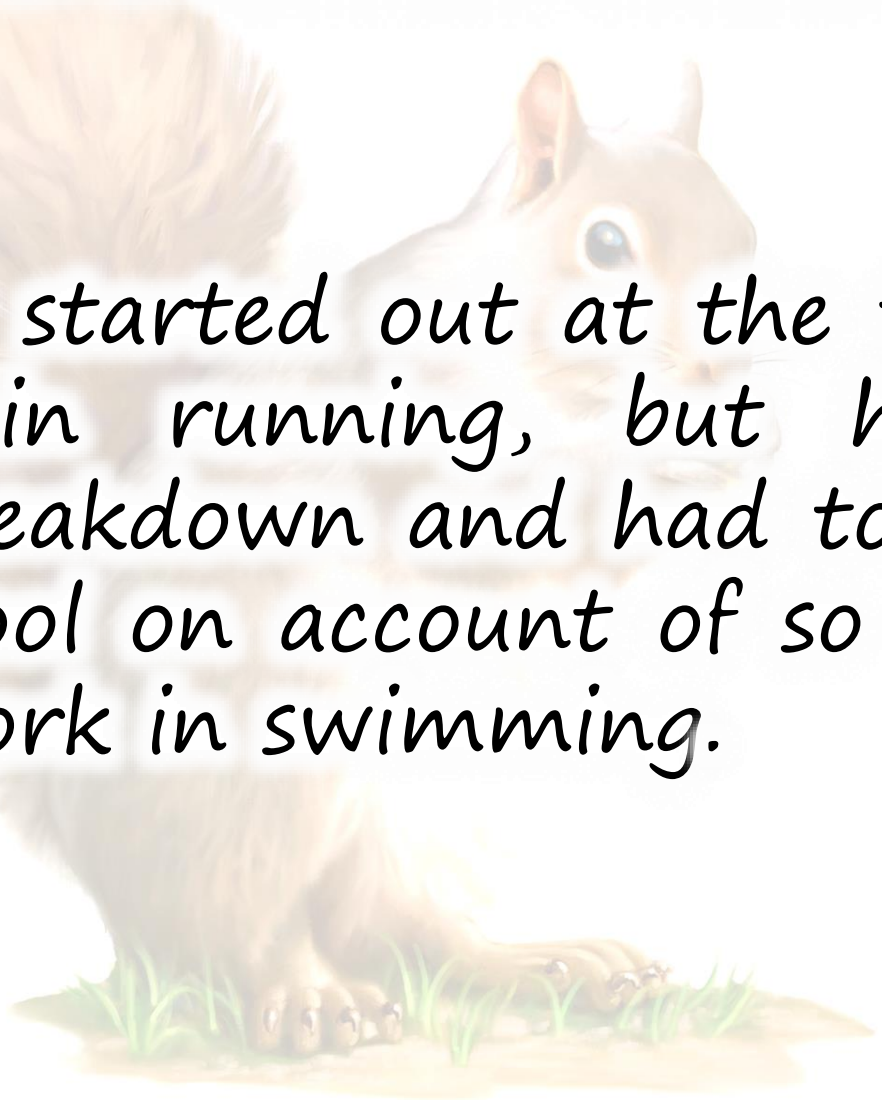


The eagle was considered a problem pupil and was disciplined severely. He beat all the others to the top of the tree in the climbing class, but he had used his own way of getting there.

The Differentiated Classroom

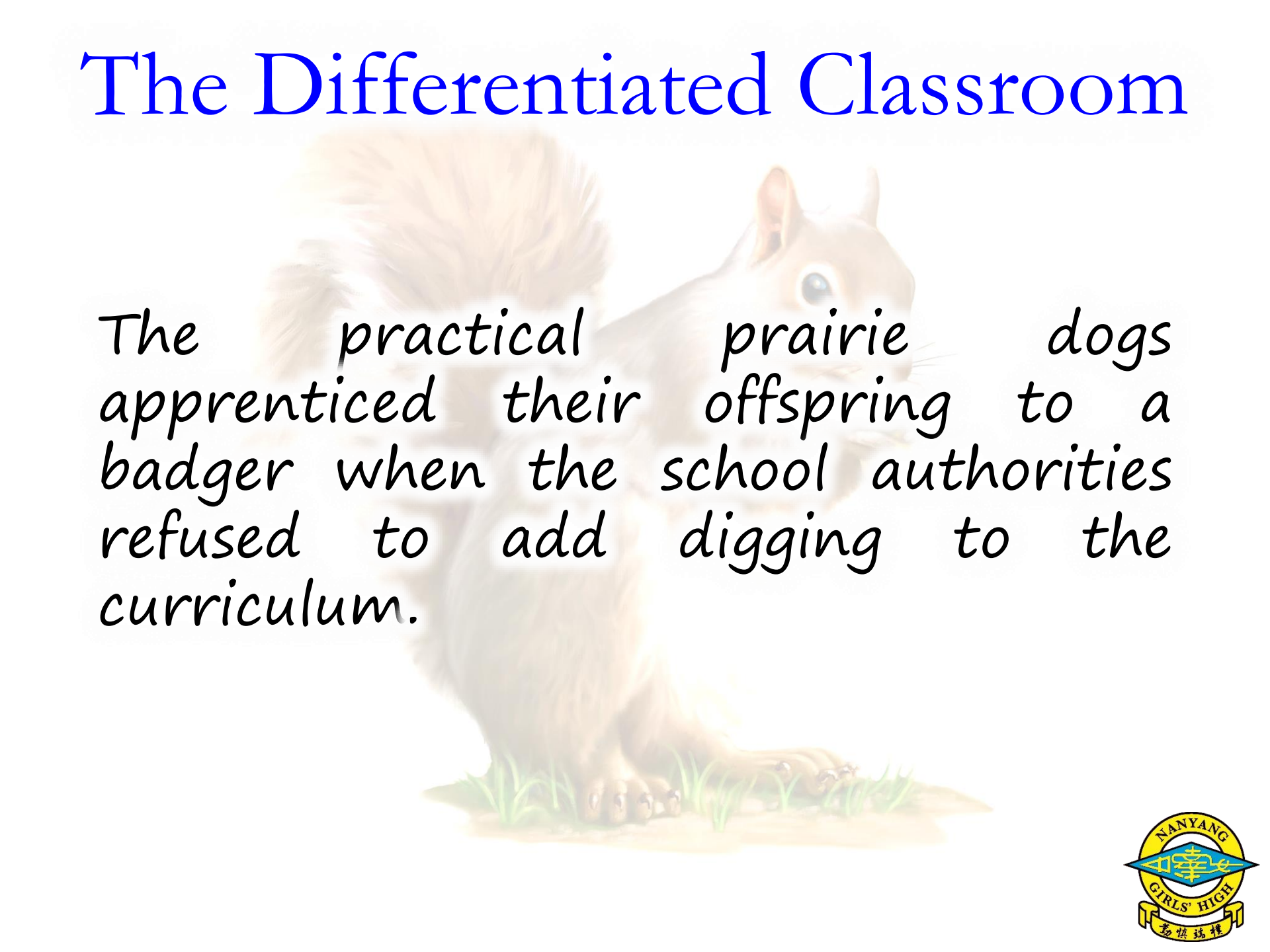


The rabbit started out at the top of his class in running, but had a nervous breakdown and had to drop out of school on account of so much makeup work in swimming.

The Differentiated Classroom

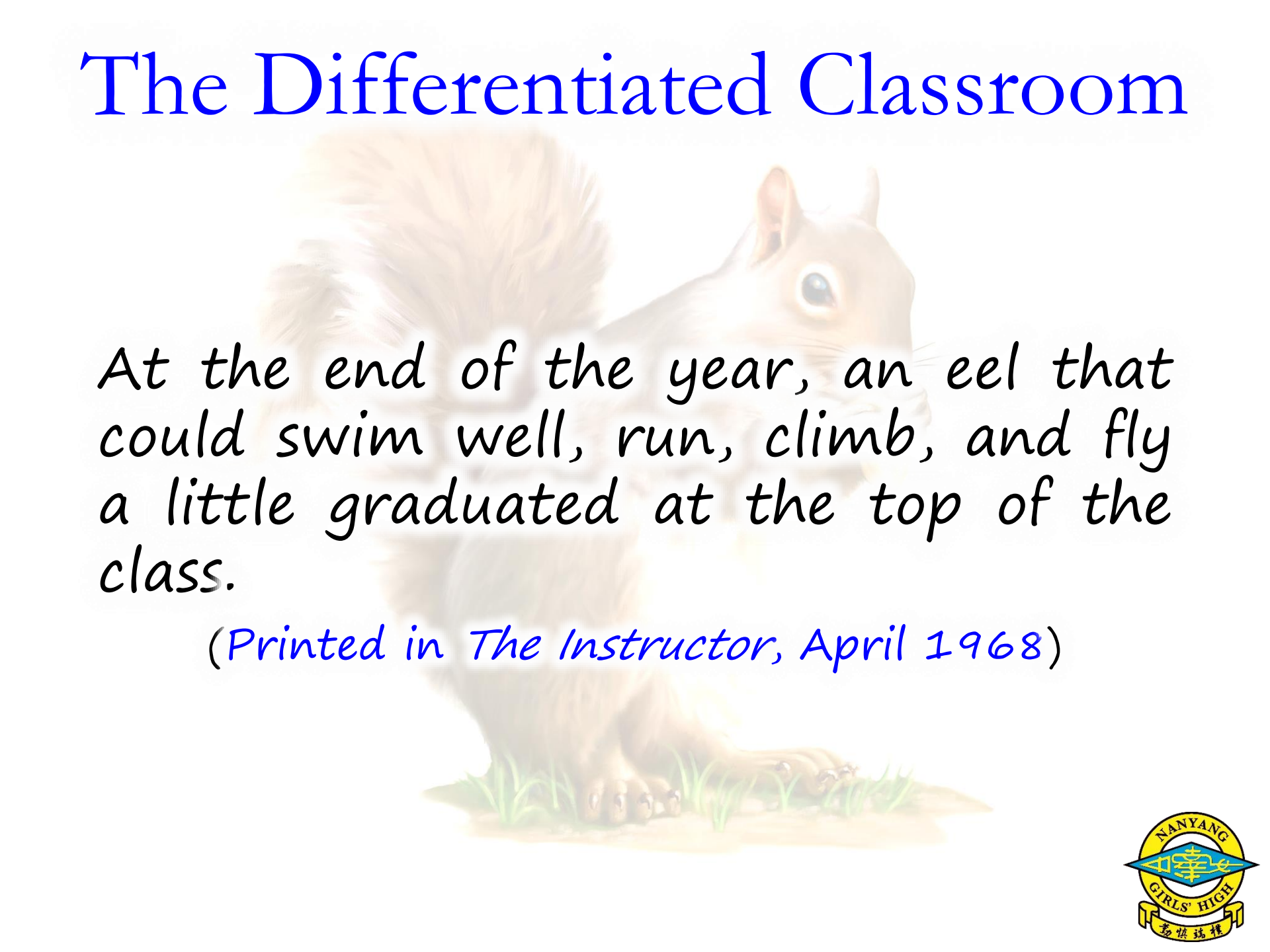
The squirrel led the climbing class, but his flying teacher made him start his flying lessons from the ground instead of the top of the tree. He developed muscle cramps from overexertion at the takeoff and began getting C's in climbing and D's in running.

The Differentiated Classroom



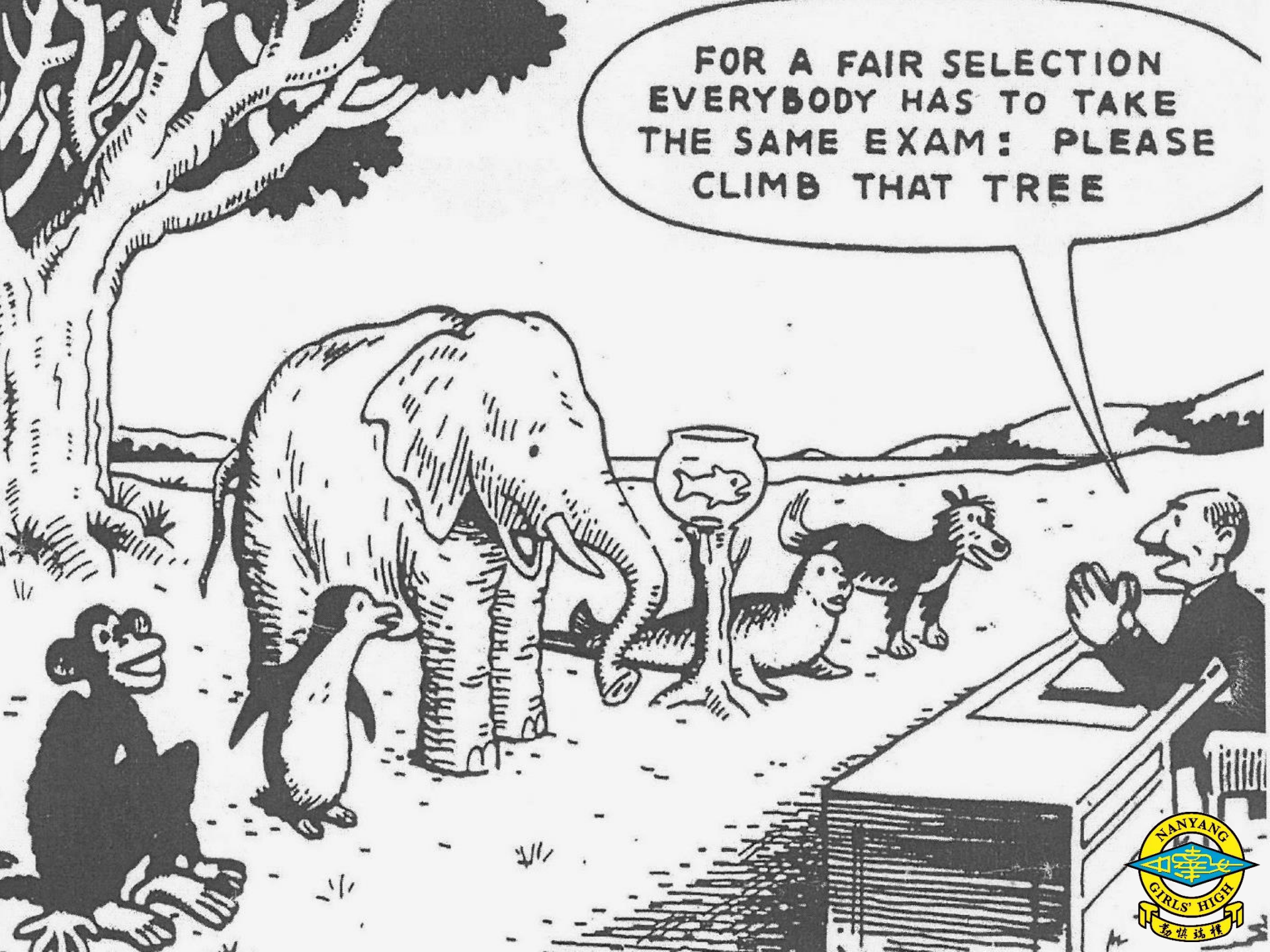
The practical prairie dogs apprenticed their offspring to a badger when the school authorities refused to add digging to the curriculum.

The Differentiated Classroom

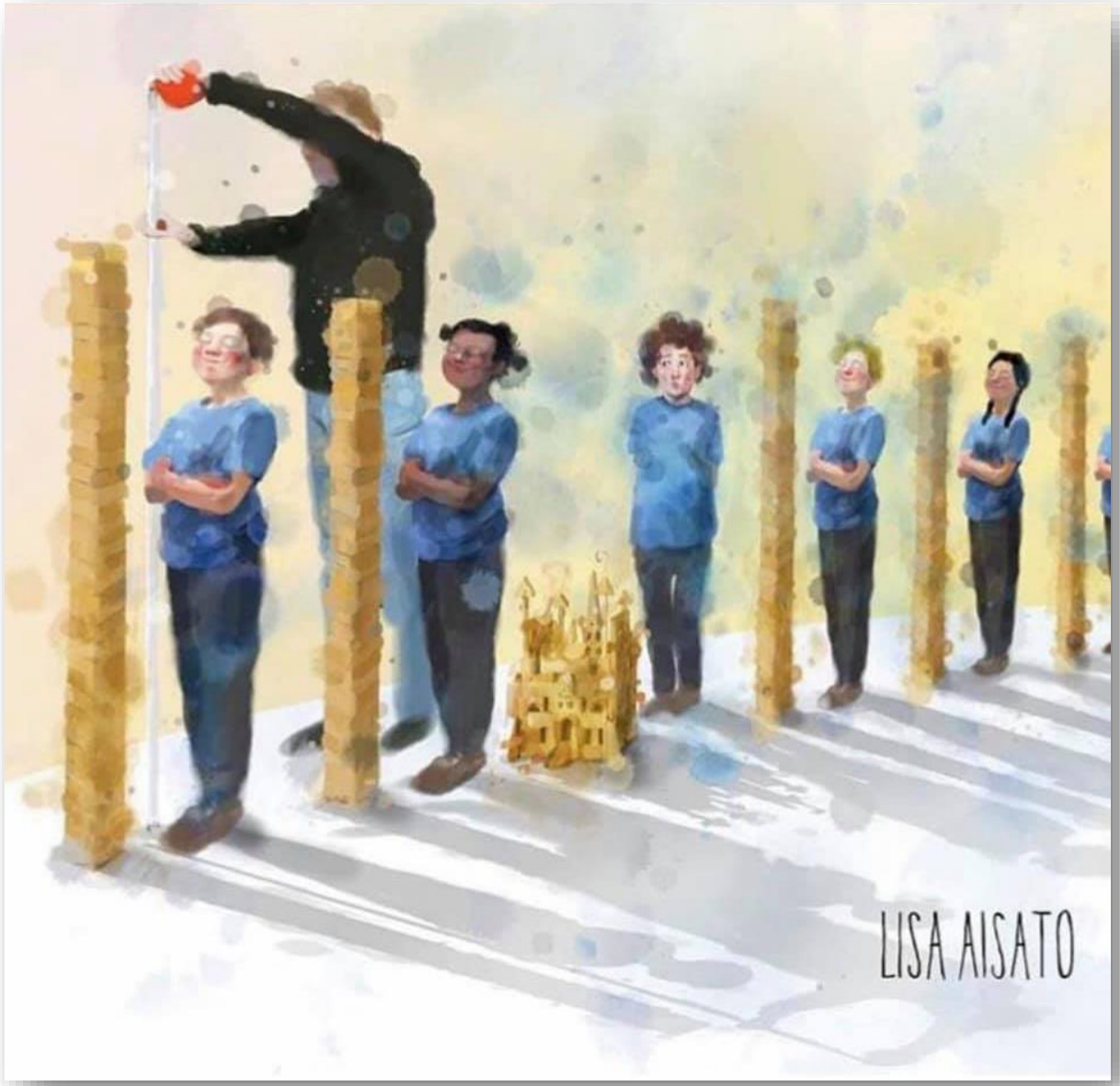


At the end of the year, an eel that could swim well, run, climb, and fly a little graduated at the top of the class.

(Printed in *The Instructor*, April 1968)


FOR A FAIR SELECTION EVERYBODY HAS TO TAKE THE SAME EXAM: PLEASE CLIMB THAT TREE

The Differentiated Classroom



- A differentiated classroom?

- What do you think is the possible story behind this picture?

- Click on the picture to read *The Tale of the Little Boy*.

The Differentiated Classroom

WHY DIFFERENTIATED INSTRUCTION?

The Differentiated Classroom

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Classrooms are filled with students who:

The Differentiated Classroom

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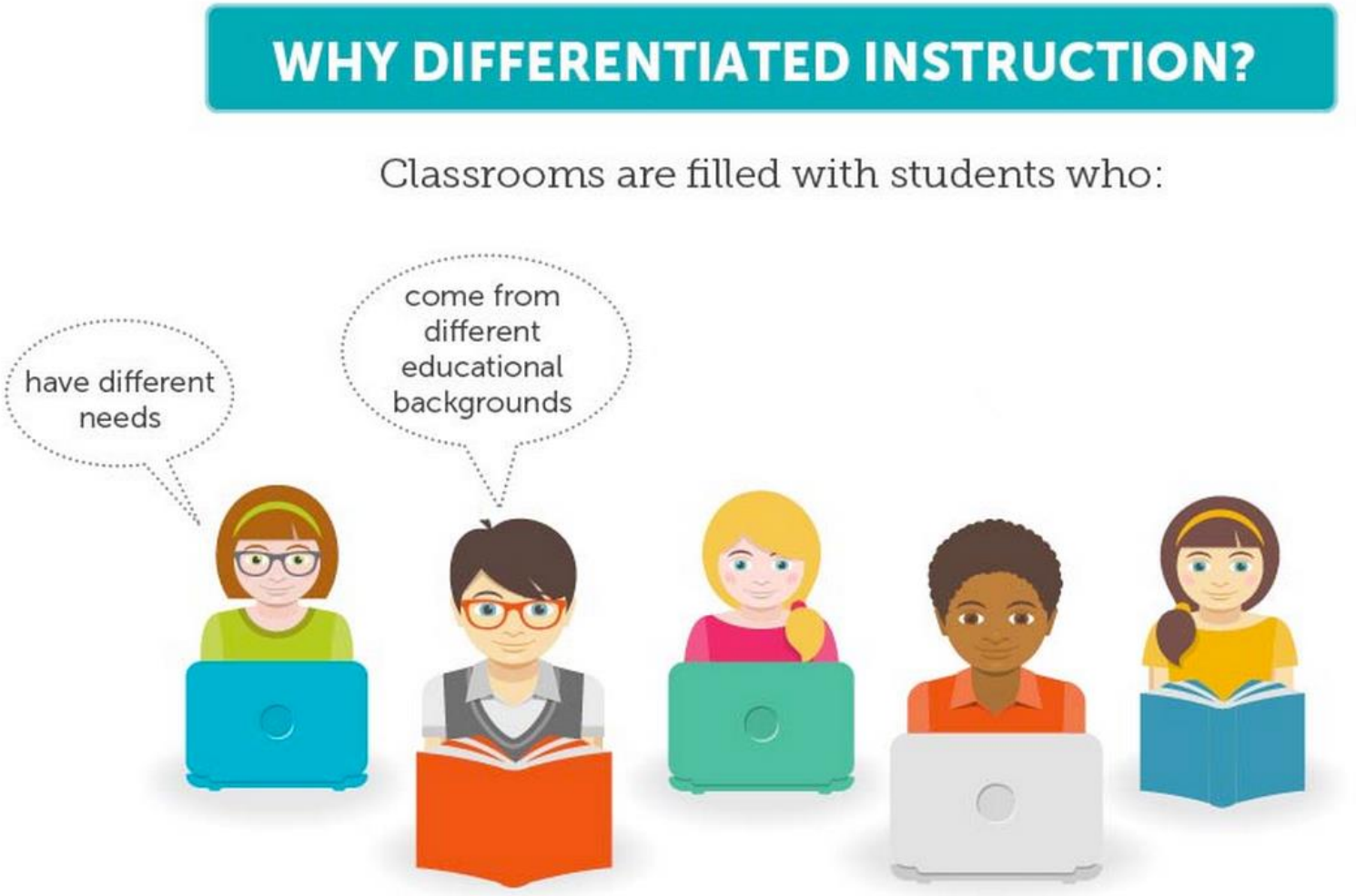
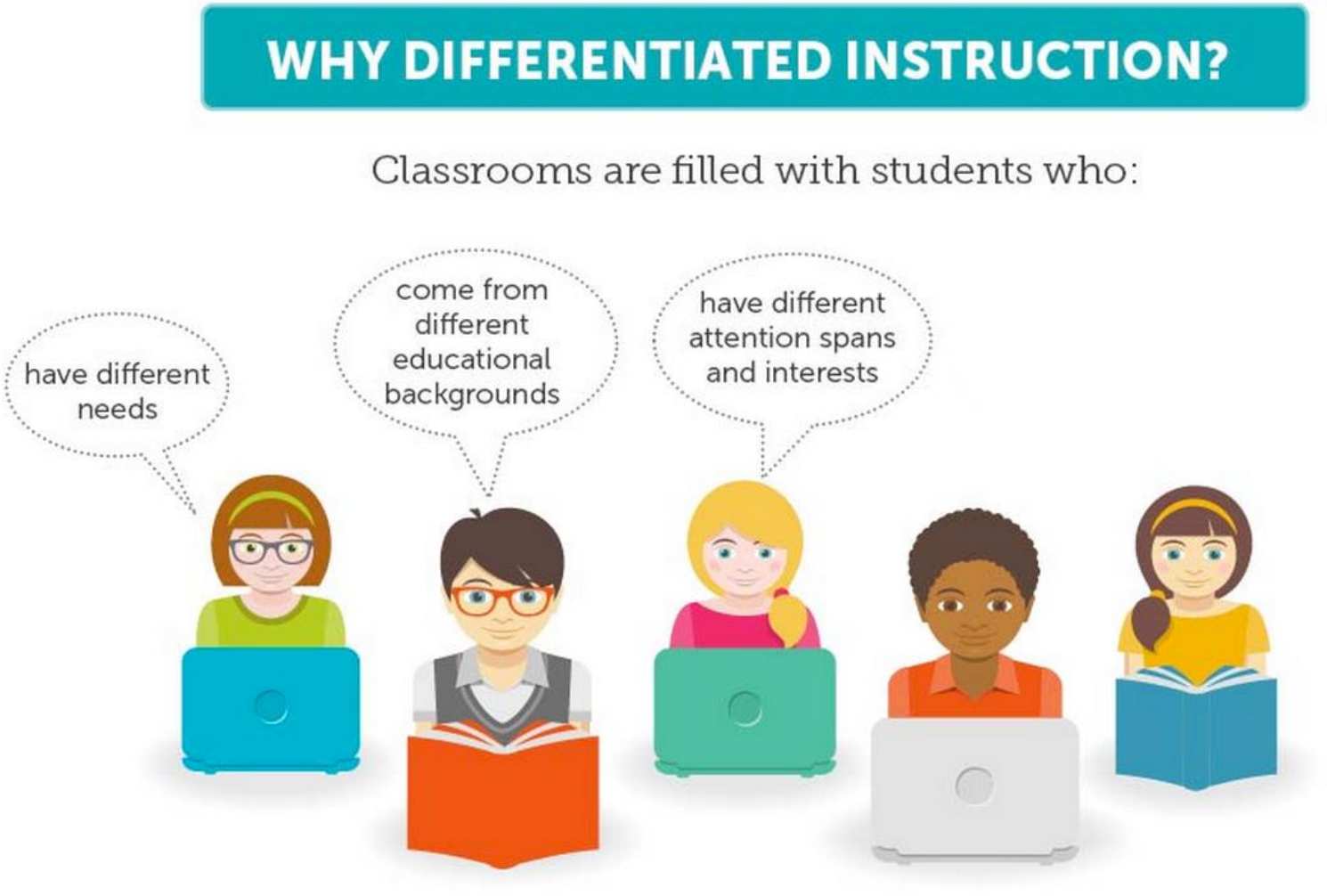


The Differentiated Classroom



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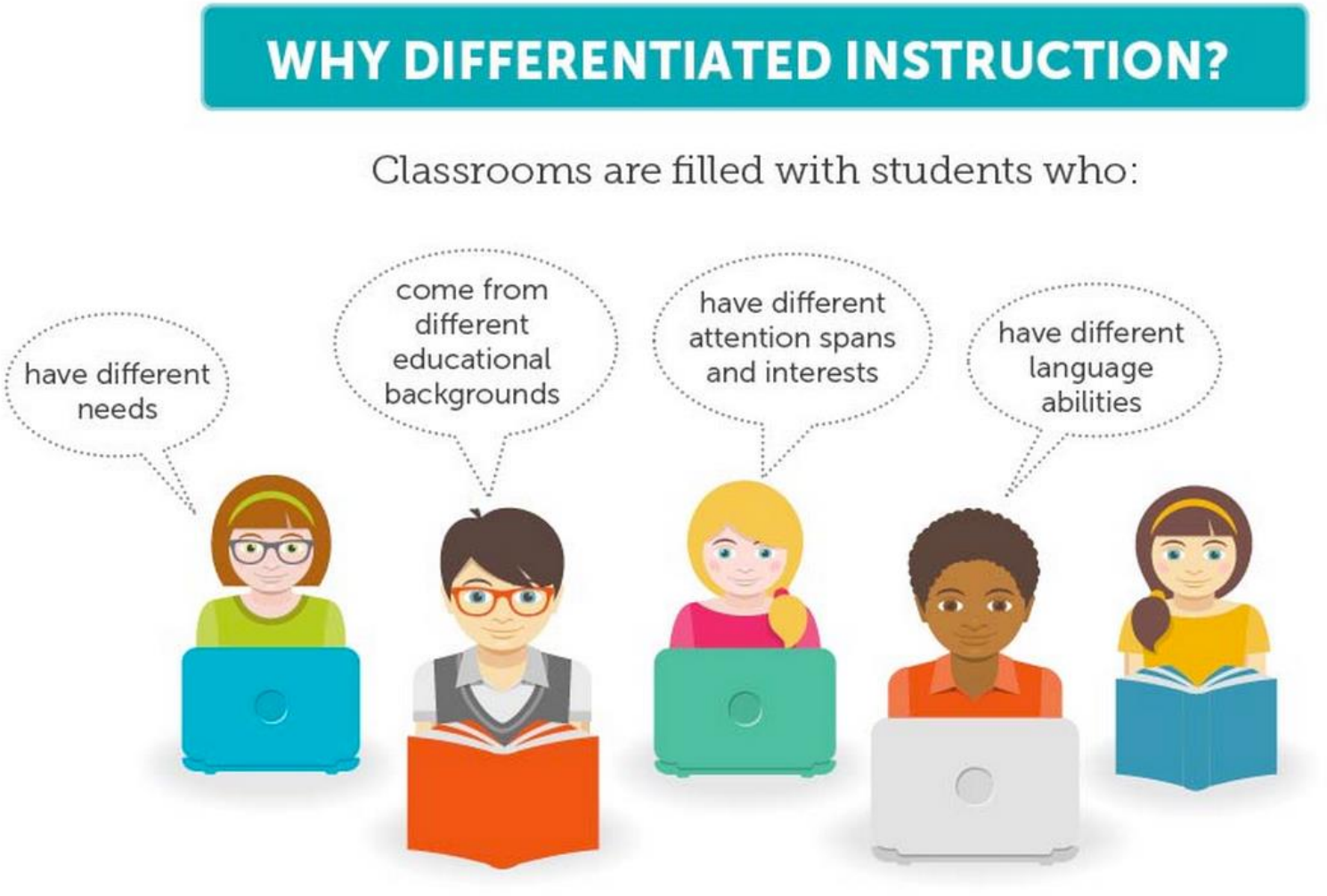

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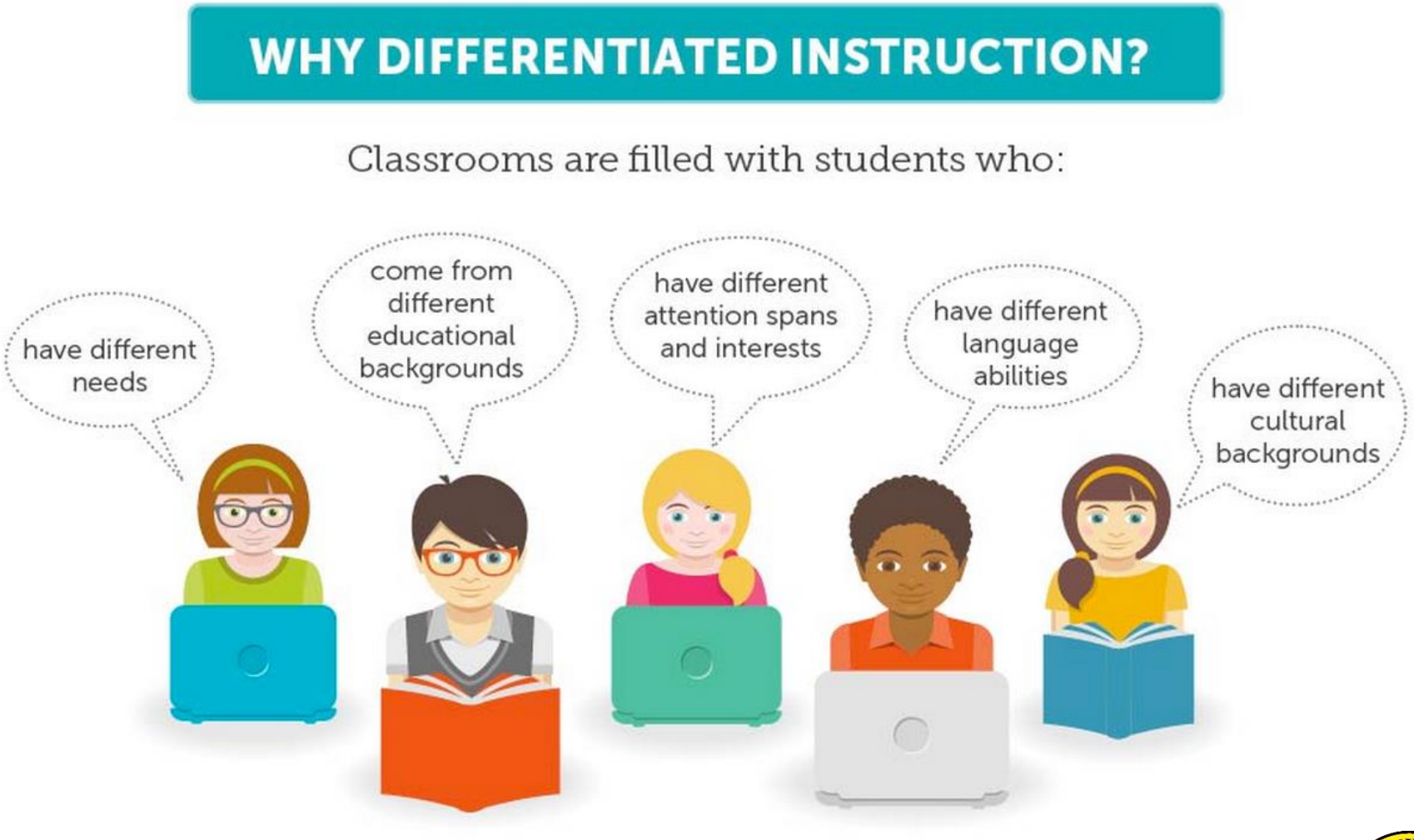

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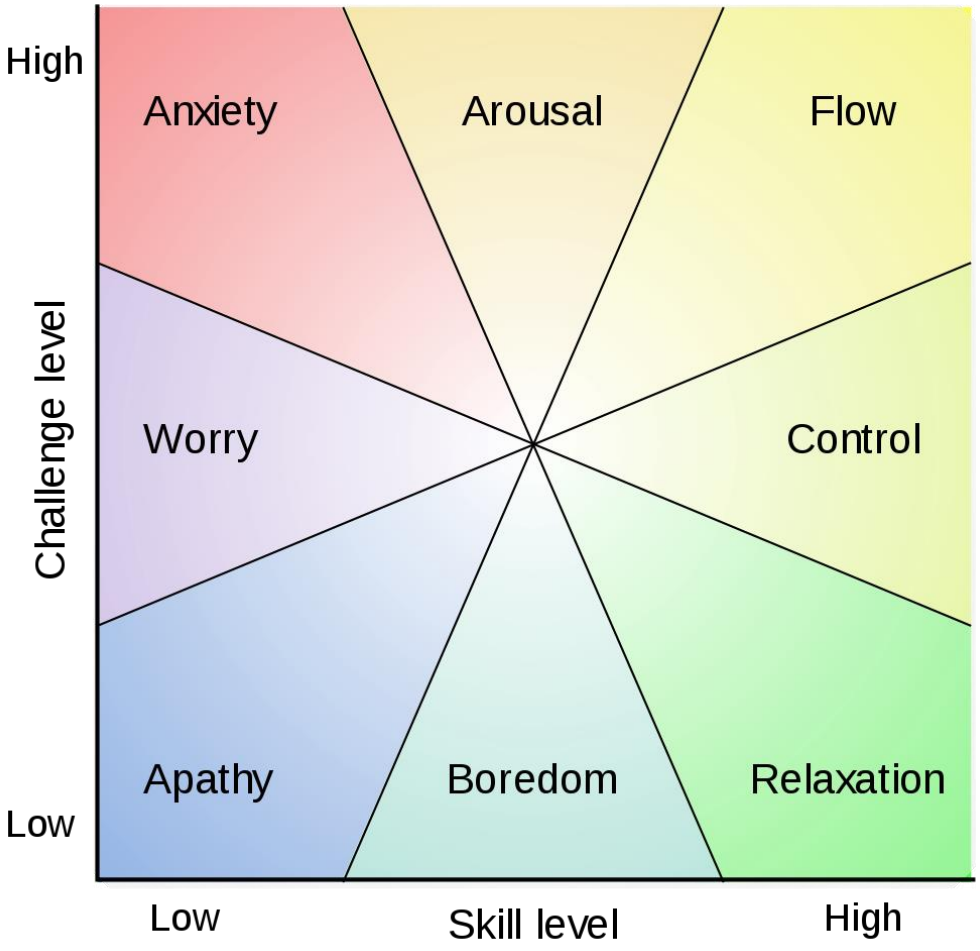


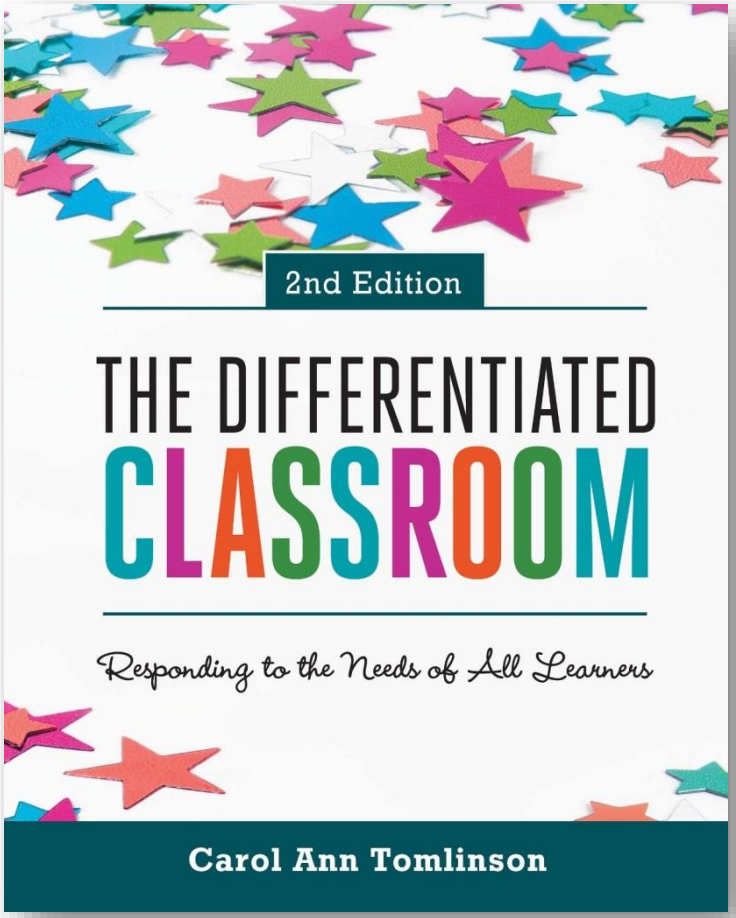
Flow Theory

Mihály Csikszentmihályi

The Differentiated Classroom

What is differentiated instruction?

The Differentiated Classroom



Carol Ann Tomlinson
Professor – University of Virginia's
School of Education

The Differentiated Classroom

Differentiated instruction and assessment (also known as *differentiated learning* or simply *differentiation*) is a framework or philosophy for effective teaching that involves providing different students with different avenues to learning (often in the same classroom) in terms of: acquiring content; processing, constructing, or making sense of ideas; and developing teaching materials and assessment measures so that all students within a classroom can learn effectively, regardless of differences in ability. Carol Ann Tomlinson

The Differentiated Classroom

Students vary in culture, socioeconomic status, language, gender, motivation, abilities / disabilities, personal interests and more, and teachers need to be aware of these varieties as they are planning their curriculum. By considering varied learning needs, teachers can develop personalised instruction so that all children in the classroom can learn effectively.

Carol Ann Tomlinson

The Differentiated Classroom

◆ Teacher's Reflection

- The teacher engages all students through thoughtfully crafted lessons that relate facts / ideas / concepts to the real world and the students' own experiences and interests.
- Lesson content and materials are pitched at different levels of student interest, learning profile and readiness.
- Students' learning and understanding are supported by appropriate assessment.

Differentiation of Instruction

Differentiation of Instruction

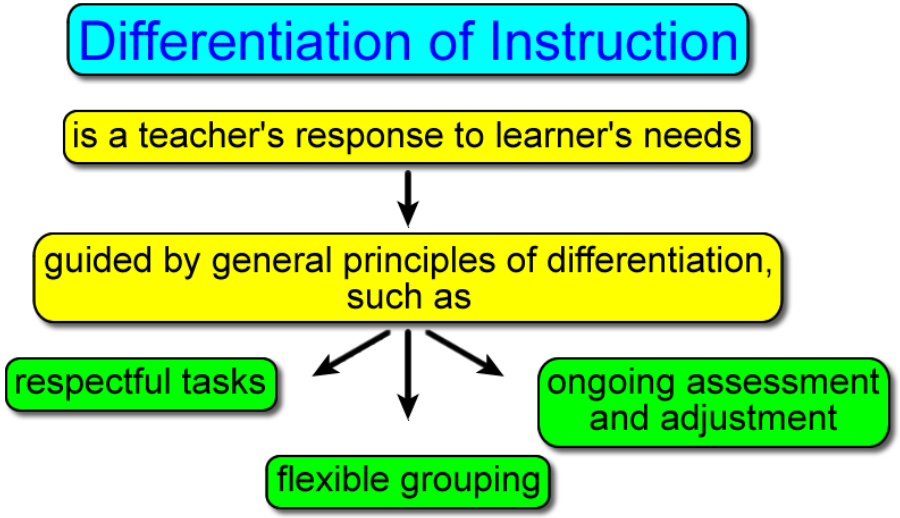
is a teacher's response to learner's needs

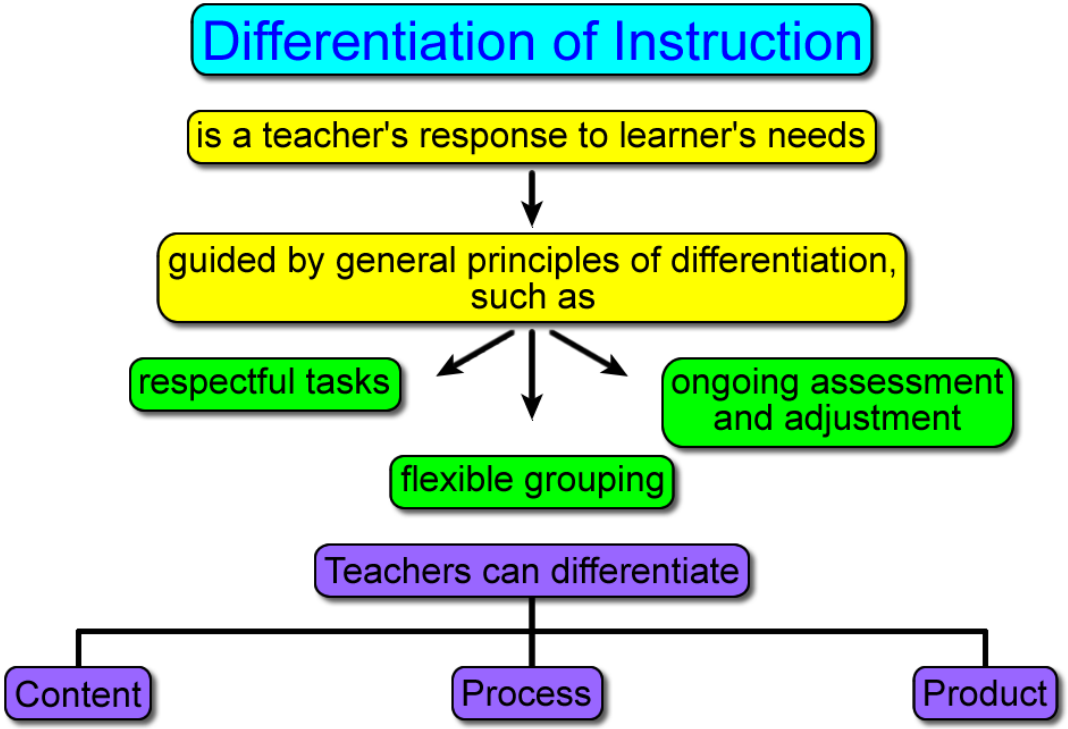
↓

guided by general principles of differentiation, such as

↙ ↓ ↘

Differentiation of Instruction




Differentiation of Instruction
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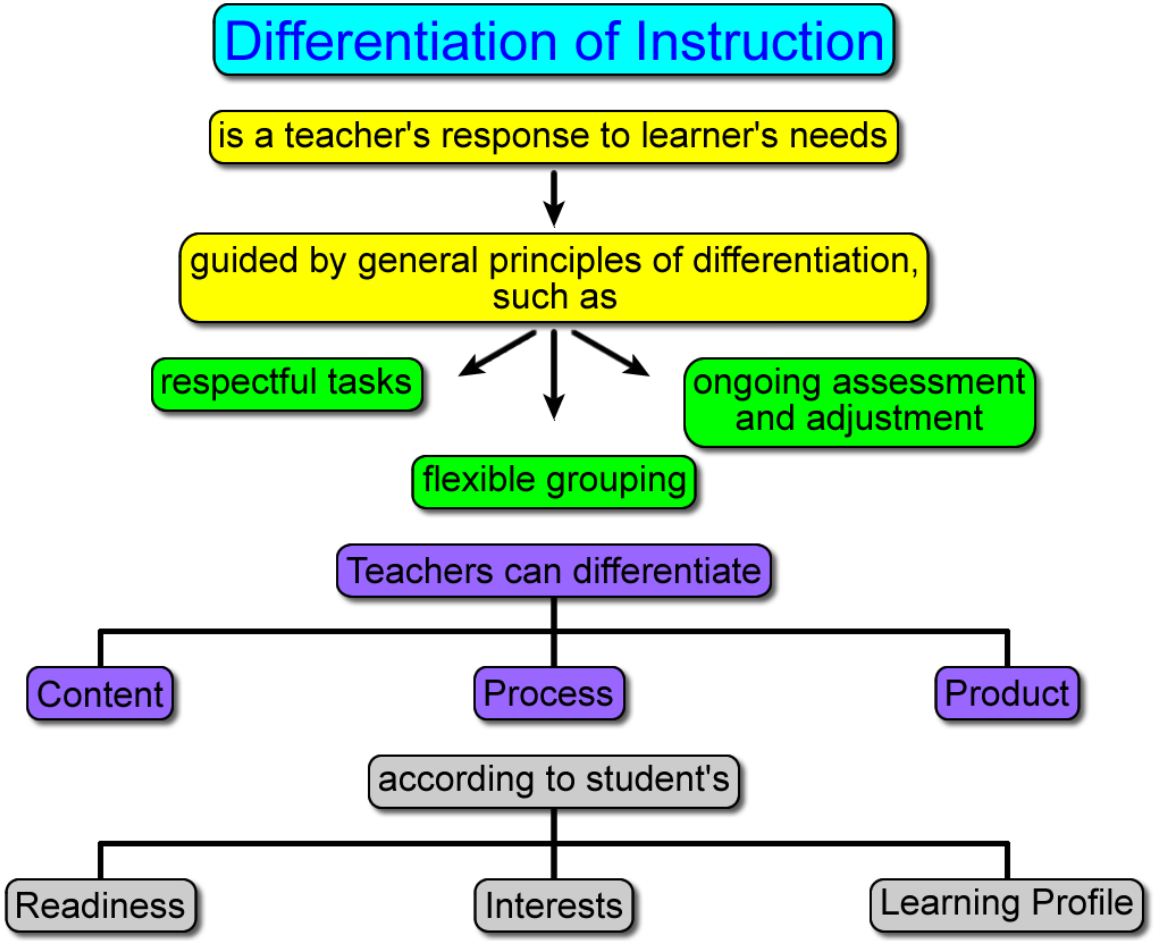
guided by general principles of differentiation, such as
respectful tasks
ongoing assessment and adjustment
flexible grouping
Teachers can differentiate
Content
Process
Product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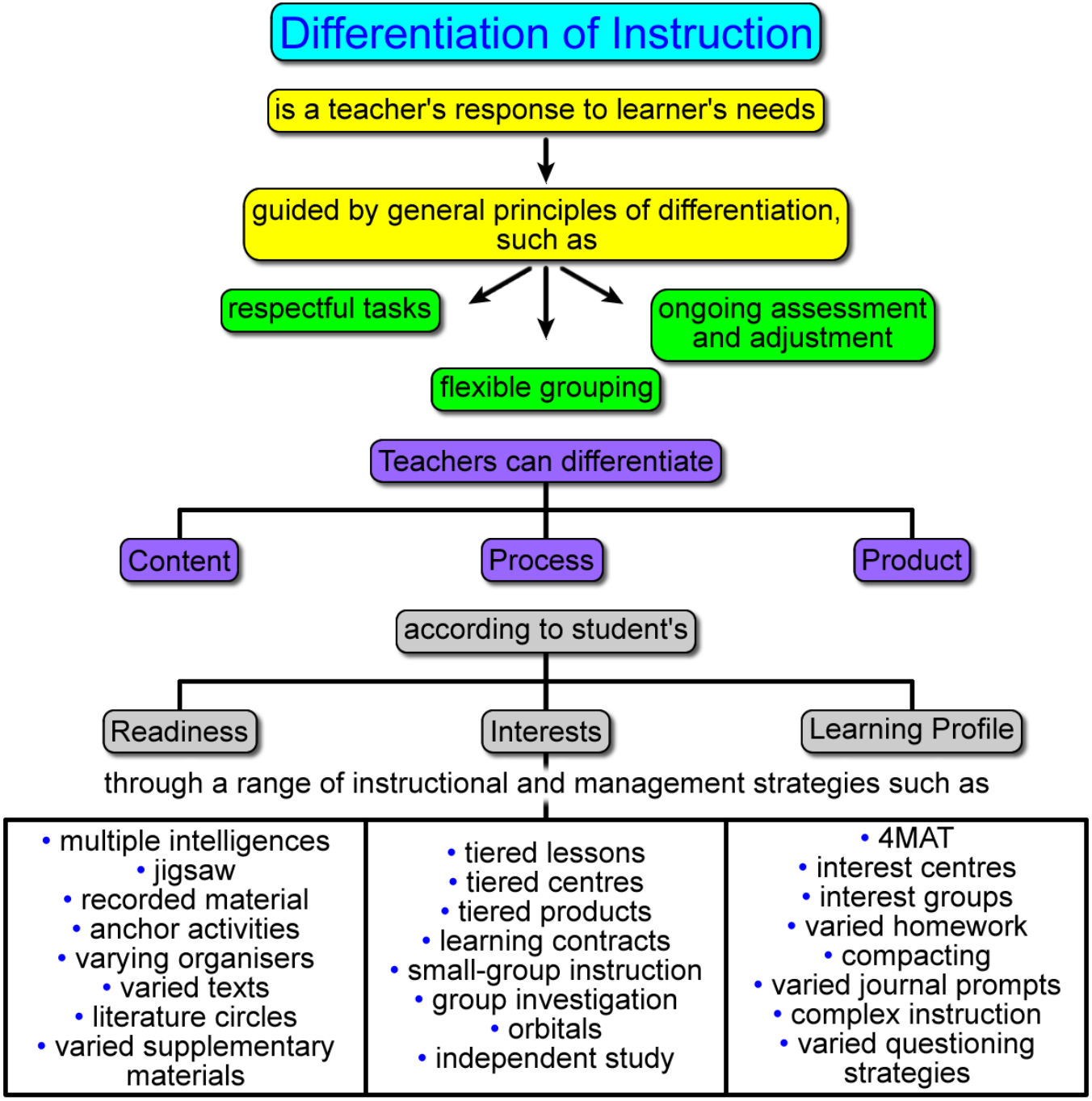
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Content
Process
Product
according to student's
Readiness
Interests
Learning Profile
through a range of instructional and management strategies such as
• multiple intelligences
• jigsaw
• recorded material
• anchor activities
• varying organisers
• varied texts
• literature circles
• varied supplementary materials
• tiered lessons
• tiered centres
• tiered products
• learning contracts
• small-group instruction
• group investigation
• orbitals
• independent study
• 4MAT
• interest centres
• interest groups
• varied homework
• compacting
• varied journal prompts
• complex instruction
• varied questioning strategies

The Differentiated Classroom

◆ Traditional Classroom

- Student differences are masked or acted upon when problematic.
- Assessment is most common at the end of learning to see “who got it.”
- A relatively narrow sense of intelligence prevails.
- A single definition of excellence exists.
- Student interest is infrequently tapped.
- Relatively few learning profile options are taken into account.

The Differentiated Classroom

◆ Traditional Classroom

- Whole class instruction dominates.
- Coverage of curriculum drives instruction.
- Mastery of facts and skills out-of-context are the focus of learning.
- Single option assignments are the norm.
- Time is relatively inflexible.
- A single text prevails.
- Single interpretations of ideas and events may be sought.

The Differentiated Classroom

◆ Traditional Classroom

- The teacher directs student behaviour.
- The teacher solves problems.
- The teacher provides whole class standards for grading.
- A single form of assessment is often used.

The Differentiated Classroom

◆ Differentiated Classroom

- Student differences are studied as a basis for planning.
- Assessment is ongoing and diagnostic to understand how to make instruction more responsive to learner need.
- Focus on multiple forms of intelligence is evident.
- Excellence is defined in large measure by individual growth from a starting point.
- Students are frequently guided in making interest-based learning choices.

The Differentiated Classroom

◆ Differentiated Classroom

- Many learning profile options are provided for.
- Many instructional arrangements are used.
- Student readiness, interest and learning profile shape instruction.
- Use of essential skills to make sense of and understand key concepts and principles is the focus of learning.
- Multi-option assignments are often used.
- Time is used flexibly in accordance with student need.

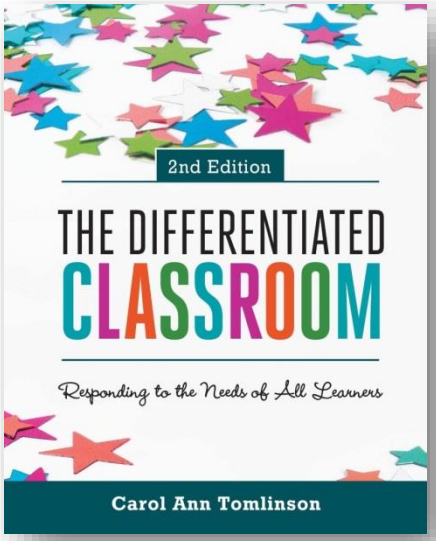
The Differentiated Classroom

◆ Differentiated Classroom

- Multiple materials are provided.
- Multiple perspectives on ideas and events are routinely sought.
- The teacher facilitates students' skills at becoming more self-reliant learners.
- Students help other students and the teacher to solve problems.
- Students work with the teacher to establish both whole-class and individual learning goals.
- Students are assessed in multiple ways.

The Differentiated Classroom

How do I differentiate instruction?



The Differentiated Classroom

◆ Learning Environments that Support Differentiated Instruction

- The Teacher Remembers to Teach the Whole Child

➢ The teacher knows that children have intellect, emotions and changing physical needs.

➢ The teacher knows that what a child brings from home cannot be left outside the classroom door, and for a lesson to be truly powerful, it must go home with the child.

- The Teacher Appreciates Each Child as an Individual

➢ The teacher makes concerted efforts to know and understand each individual student.

➢ The teacher "risks" being known and understood by their students.

The Differentiated Classroom

◆ Learning Environments that Support Differentiated Instruction

• The Teacher Continues to Develop Expertise

➢ Genuine expertise in a subject area is not so much mastery of facts as it is the application of insights and skills.

• The Teacher Offers High Expectations and Lots of Ladders

➢ The teacher helps their students to dream big. The teacher knows that not all of the dreams will be alike, but each student needs big dreams and concrete ways to reach them.

➢ The teacher knows each student's learning benchmarks and the scaffolding needed to get there.

The Differentiated Classroom

◆ Learning Environments that Support Differentiated Instruction

• The Teacher Links Students and Ideas

➢ Teachers should make remote subjects real and relevant to their students by showing them meaningful links to their own lives.

• The Teacher Helps Students Make Their Own Sense of Ideas

➢ A teacher cannot transfer their knowledge and experience to their students. Instead, the teacher has to find ways to help their students take responsibility for inventing their own understanding of the world.

The Differentiated Classroom

◆ Learning Environments that Support Differentiated Instruction

• The Teacher Uses Positive Energy and Humour

➢ Humour stems from making unexpected and pleasurable connections, from freedom to be spontaneous, from the sense that errors can be surprisingly instructive.

• "Discipline" is More Covert than Overt

➢ Clear guidelines and routines help students know how to make appropriate decisions. Students gain power and attention in positive ways. Students are accepted and valued – and they know it.

The Differentiated Classroom

◆ Learning Environments that Support Differentiated Instruction

- The Teacher Strives for Joyful Learning

➢ The teacher seeks to ensure both engagement and understanding for all learners in every lesson.

- The Teacher Clearly Strives for Student Independence

➢ Teachers provide directions and guidelines for quality, but they leave some ambiguity, choice and flexibility so that students have to make leaps of transfer and apply common sense.

The Differentiated Classroom

◆ Learning Environments that Support Differentiated Instruction

- The Teacher Shares the Teaching with Students

➢ Students come to class with vast amounts of tacit knowledge, a clear sense of what works in their world, and valuable insights about themselves and their peers.

➢ Make it possible for students to teach one another.

➢ Engage students in conversations about class rules, schedules and procedures.

➢ "Metacognitive Teaching" – Teachers explain to their students how they plan for their lessons and what classroom issues they puzzle over.

The Differentiated Classroom

◆ Good Instruction as a Basis for Differentiated Teaching

- When a teacher lacks clarity about what a student should know, understand and be able to do as a result of a lesson, the learning tasks she creates may or may not be engaging and almost certainly won't help students understand essential ideas or principles.

- A *fuzzy* sense of the essentials results in fuzzy activities, which, in turn, results in fuzzy student understanding. This is a barrier to high quality teaching and learning.

The Differentiated Classroom

- Good Inst… as a …is for Differen… Tea…

- When a teacher lacks … student should know, understand an… …sult of a lesson, the learning task… …y not be engaging and almos… …dents understand …ciples.

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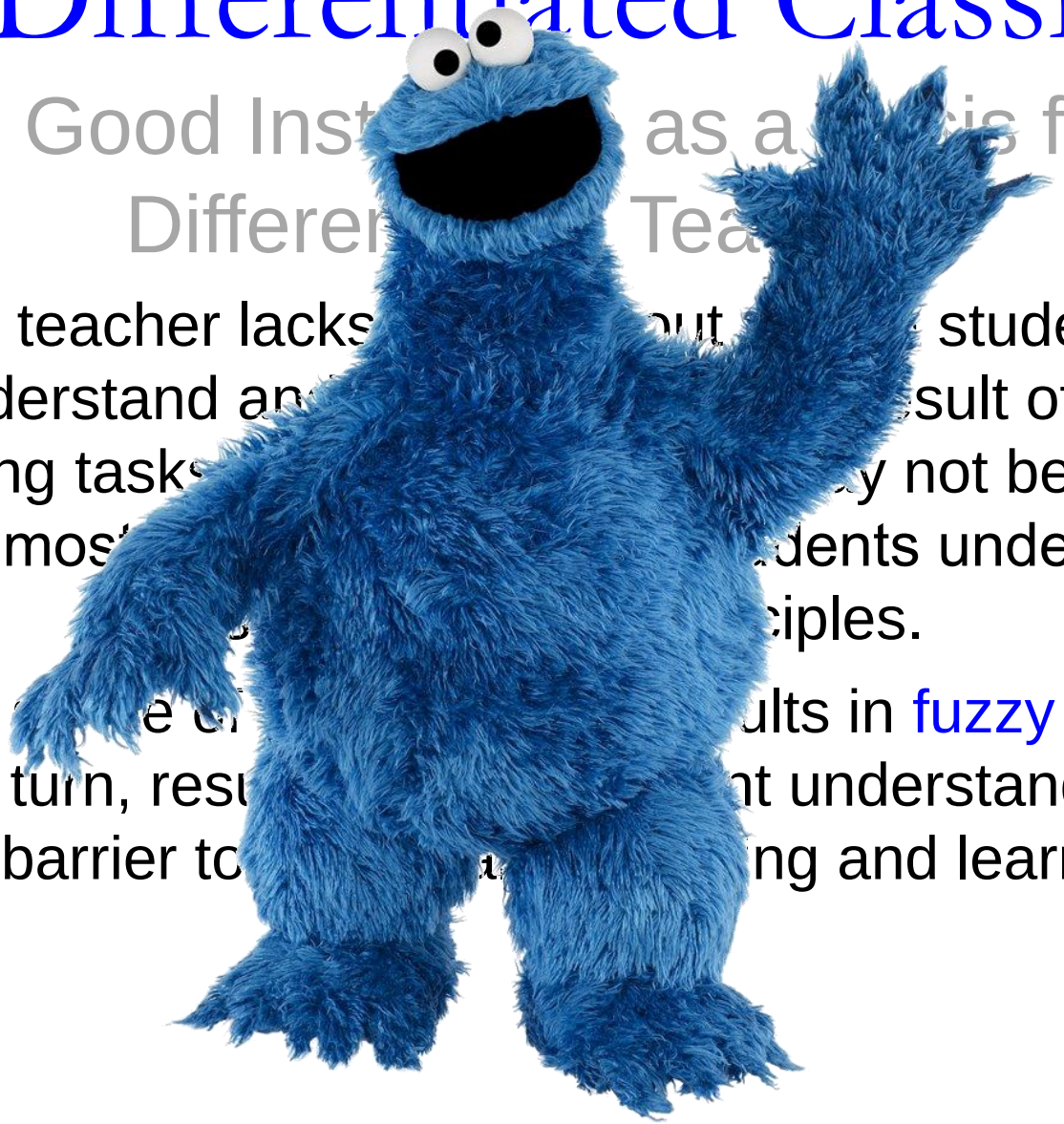


The Differentiated Classroom

◆ Good Instruction as a Basis for Differentiated Teaching

- A teacher's *fuzzy* idea of what their students should know and understand also works against differentiated instruction.

- With many differentiated lessons, all students need to understand the same essential principles and even use the same key skills. Yet, because of variance in student readiness, interest or learning profile, children must "come at" the ideas and use the skills in different ways.

The Differentiated Classroom

◆ Good Instruction as a Basis for Differentiated Teaching

- If a teacher isn't clear about what their students need to understand and be able to do when the learning experience ends, then the teacher is lacking a vital organiser that is essential to developing powerful lessons.

The Differentiated Classroom

◆ Good Instruction as a Basis for Differentiated Teaching

- A student who understands something can…
  - ➢ Clearly explain it, giving examples.
  - ➢ Compare and contrast it with other concepts.
  - ➢ Transfer it to unfamiliar settings.
  - ➢ Combine it appropriately with other understandings.
  - ➢ Create analogies, models, metaphors, symbols or pictures of the concept.
  - ➢ Generate questions and hypotheses that lead to new knowledge and further inquiries.

The Differentiated Classroom

◆ Good Instruction as a Basis for Differentiated Teaching

- All subjects are built upon essential concepts and principles All subjects, by their nature, call for use of key skills, which professionals in that field use.
- Some concepts are generic and cut across subjects naturally and invite linkages. Examples of generic concepts are *system*, *scale*, *model* and *change*.
- Other concepts are more subject specific. They are essential to one ore more disciplines, but they are not as powerful in others. Examples of subject specific concepts include *composition* in art and *voice* in literature.

The Differentiated Classroom

◆ Good Instruction as a Basis for Differentiated Teaching

- Similarly, skills can be generic or subject specific. General skills include writing a cohesive paragraph, arranging ideas in order, and posing effective questions.
- Skills that are subject specific include balancing an equation in chemistry, transposing in music and using metaphorical language in literature.

The Differentiated Classroom

◆ Good Instruction as a Basis for Differentiated Teaching

- Two elements are required for a great class: *engagement* and *understanding*.

- During planning, a teacher should generate specific lists of what students should know (*facts*), understand (*concepts* and *principles*), and be able to do (*skills*) by the time the unit ends. Then the teacher should create a core of engaging activities that offer varied opportunities for learning the essentials she has outlined. These activities should lead a student to understand or make sense of key concepts and principles by using key skills.

The Differentiated Classroom

◆ Good Instruction as a Basis for Differentiated Teaching

• Content is “input.” It encompasses the means by which students will become acquainted with information (through textbooks, supplementary readings, videos, field trips, invited speakers, demonstrations, experiments or computer programmes).

The Differentiated Classroom

◆ Good Instruction as a Basis for Differentiated Teaching

• Process is the opportunity for students to make sense of the content. Student must process ideas in order to own them. In the classroom, process typically takes place in the form of activities. An activity is likely to be effective if…

- ➢ It has a clearly defined instructional purpose.
- ➢ Focuses students squarely on one key understanding.
- ➢ Causes students to use a key skill to work with key ideas.
- ➢ Ensures that students will have to understand the idea.
- ➢ Helps students relate new understandings to old ones.
- ➢ Matches the students level of readiness.

The Differentiated Classroom

◆ Good Instruction as a Basis for Differentiated Teaching

- Product is the vehicle through which a student shows (and extends) what he or she has come to understand and can do as a result of a considerable segment of learning. The term product means “culminating product,” or something that students produce to exhibit a major portion of learning.
  - A culminating product could be a test, or it could be a visual display, such as a narrated photo essay.

The Differentiated Classroom

◆ Good Instruction as a Basis for Differentiated Teaching

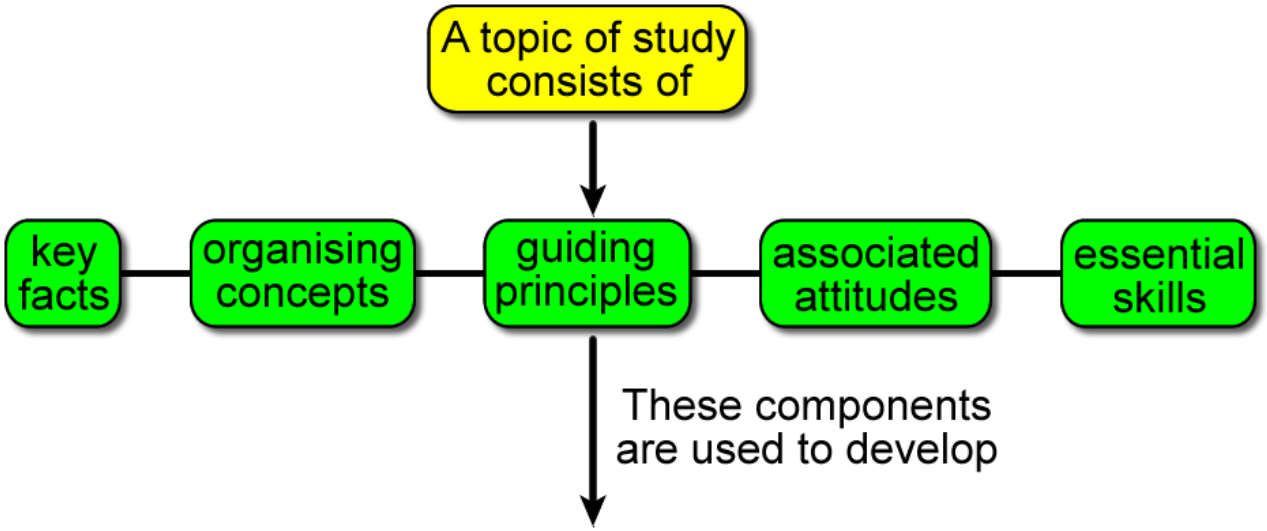
- An effective assignment for a culminating product will…
  - ➢ Clearly lay out what students should demonstrate, transfer or apply to show what they understand and can do as a result of the study.
  - ➢ Provide one or more modes of expression.
  - ➢ Lay out clear, precise expectations for high quality content, steps and behaviours of developing the product, and the nature of the product itself.
  - ➢ Provide support and scaffolding for student success.
  - ➢ Provide for variations in student readiness, interest and learning profile.

Joining Levels of Learning and Elements of Curriculum

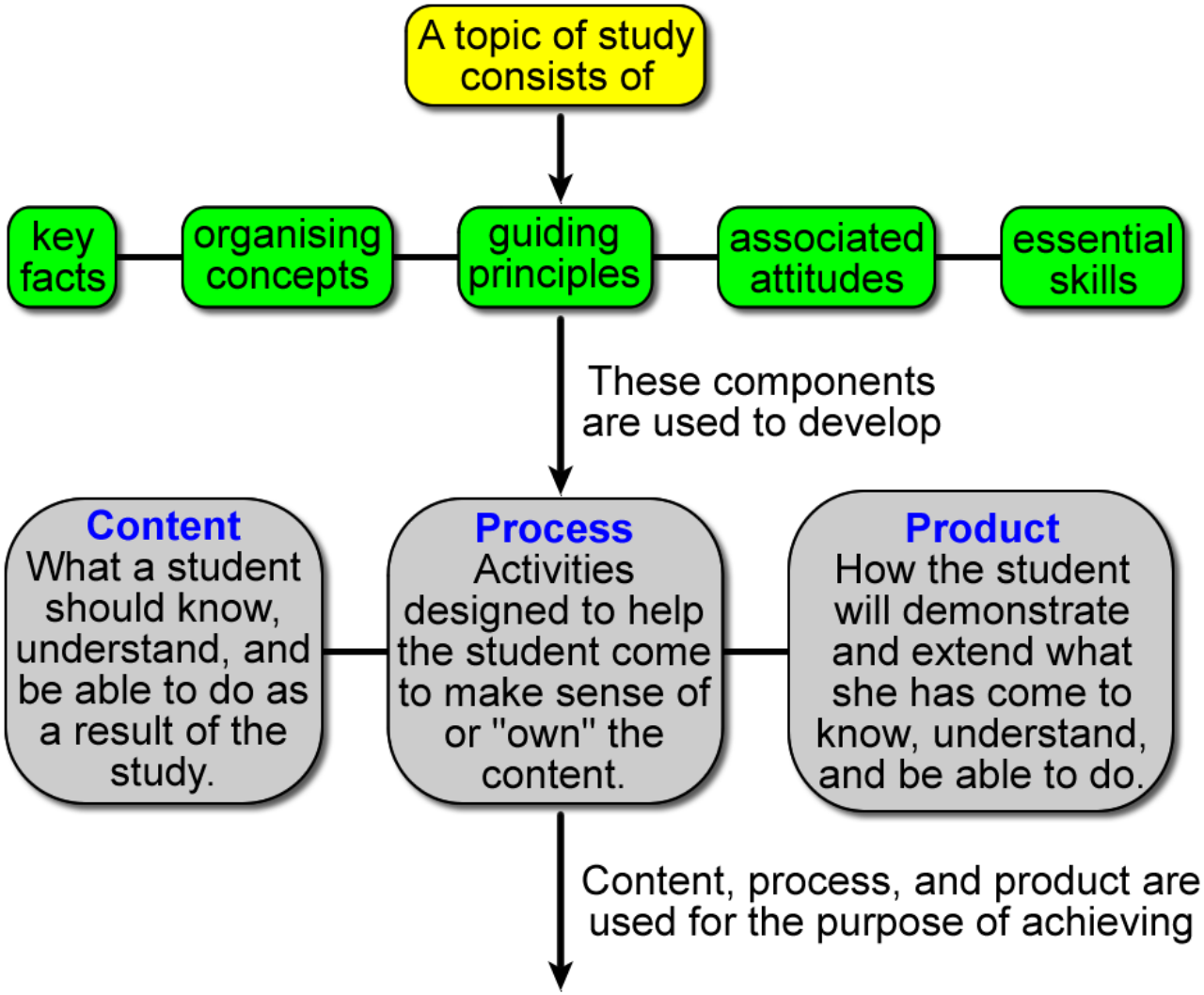
Joining Levels of Learning and Elements of Curriculum

A topic of study consists of

Joining Levels of Learning and Elements of Curriculum



Joining Levels of Learning and Elements of Curriculum



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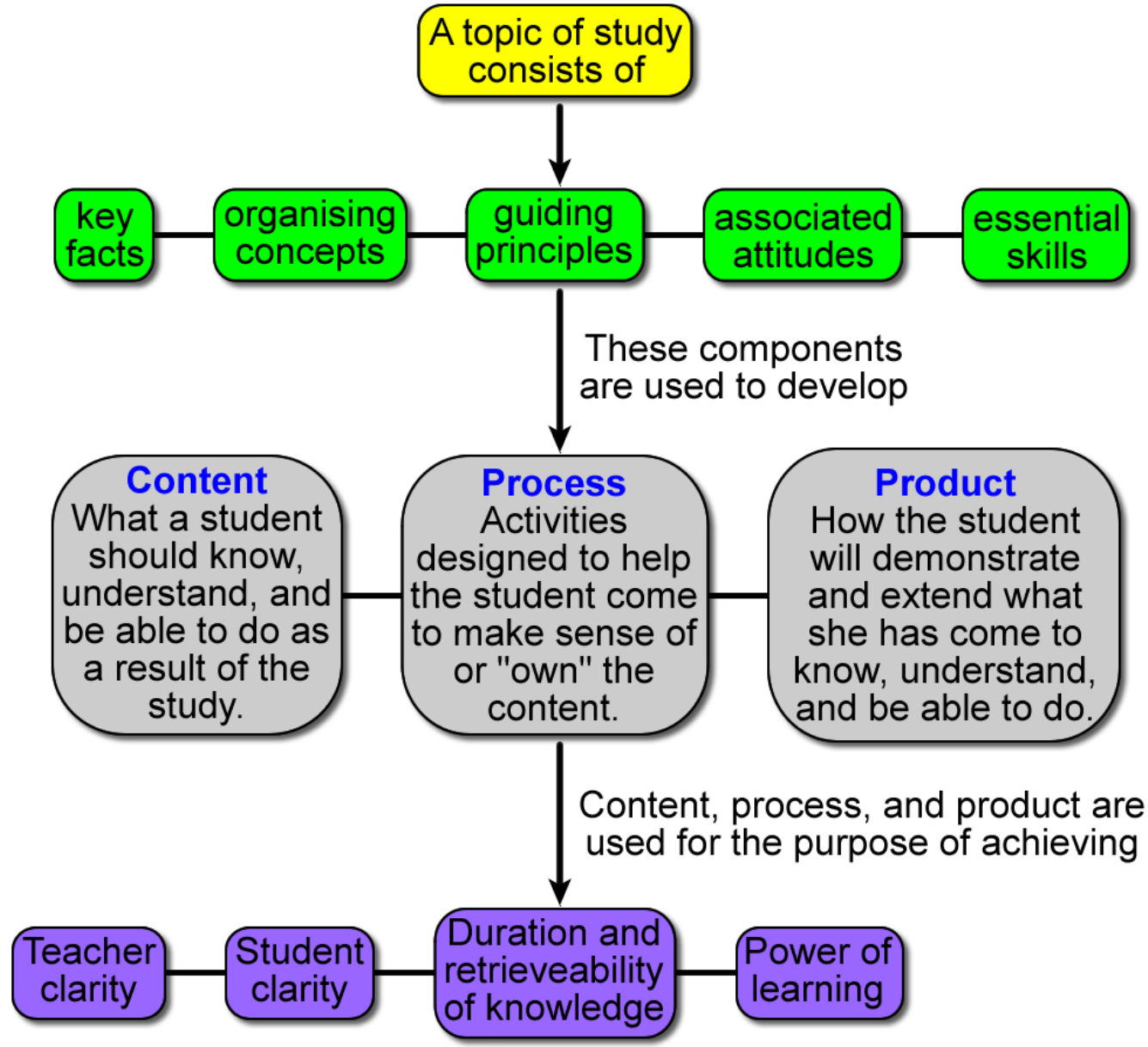

The Differentiated Classroom

- Instructional Strategies the Support Differentiation

1. Stations

Stations are different spots in the classroom where students work on various tasks simultaneously. For the sake of differentiated instruction, stations allow different students to work on different tasks. They invite flexible grouping because not all students need to go to all of the stations all of the time. Not all students need to spend the same amount of time at each station. For some activities, the students can choose which stations they want / need to go to. For other activities, the teacher decides which stations individual students go to.

The Differentiated Classroom

- Instructional Strategies the Support Differentiation

2. Agendas

An agenda is a personalised list of tasks that a particular student must complete in a specified time. Student agendas throughout a class will have similar and dissimilar elements on them. A teacher usually creates an agenda that will last a student two-to-three weeks. Generally, students determine the order in which they will complete the agenda items. While students work on their agendas, the teacher has great freedom to move among individual students, coaching and monitoring their understanding and progress.

The Differentiated Classroom

- Instructional Strategies the Support Differentiation

3. Complex Instruction

Complex instruction is a rich strategy developed to deal with the sorts of academic ranges that frequently exist in classrooms that are academically, culturally and linguistically heterogeneous. Its goal is to establish equity of learning opportunity for all students in the context of intellectually challenging materials and through the use of small instructional groups. It helps to establish a classroom in which the contributions of every individual are prized by all students.

The Differentiated Classroom

- Instructional Strategies the Support Differentiation

3. Complex Instruction

Complex instruction tasks…

- Require students to work together in small groups.
- Are designed to draw upon the intellectual strengths of each student in the group.
- Are open-ended.
- Are intrinsically interesting to students.
- Are uncertain (thus allowing for a variety of solutions and solution routes).

The Differentiated Classroom

- Instructional Strategies the Support Differentiation

3. Complex Instruction

Complex instruction tasks…

- Involve real objects.
- Integrate reading and writing in ways that make them an important means to accomplishing a desirable goal.
- Draw upon multiple intelligences in a real-world way.
- Use multimedia.
- Require many different talents in order to be completed adequately.

The Differentiated Classroom

- Instructional Strategies the Support Differentiation

3. Complex Instruction

Teachers who skilfully use complex instruction move amongst groups as they work. They ask students questions about their work, probing their thinking and facilitating their understanding. Teachers study students continually and systematically to identify individual strengths. Teachers then design complex instruction tasks that call upon the various student abilities. Teachers seek key moments in group work when a student makes a worthwhile comment or suggestion. The teacher then articulates why she feels that it is a positive contribution to the whole group.

The Differentiated Classroom

- Instructional Strategies the Support Differentiation

4. Orbital Studies

Orbital studies are independent investigations, generally of three to six weeks. They “orbit,” or revolve, around some facet of the curriculum. Students select their own topics for orbitals, and they work with guidance and coaching from the teacher to develop more expertise both on the topic and on the process of becoming an independent investigator. Orbitals work from the premise that all learners are dignified by developing and sharing knowledge and skills. Initial lists of potential topics can be derived from surveys of students’ interests.

The Differentiated Classroom

- Instructional Strategies the Support Differentiation

4. Orbital Studies

- Teachers help students develop a clear question for study, a plan for research, a method of presentation, and criteria for quality.
- Successfully completing an orbital includes keeping a log of time spent on the study, resources used, and ideas and skills gained. It also requires that students provide a written overview of what was learned. The student must give a presentation to at least five peers, providing a one page hand-out for the audience, and using a display or demonstration.

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- Instructional Strategies the Support Differentiation

5. Centres

A *learning centre* is a classroom area that contains a collection of activities or materials designed to teach, reinforce, or extend a particular skill or concept. An *interest centre* is designed to motivate students' exploration of topics in which they have a particular interest. The materials and tasks at learning centres are typically more teacher constructed, though they encourage students to share in designing what and how something will be studied. The materials and tasks are more exploratory in nature compared to other assignments.

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- Instructional Strategies the Support Differentiation

5. Centres

In general, centres should…

- Focus on important learning goals.
- Contain materials that promote individual students' growth toward those goals.
- Use materials and activities addressing a wide range of learning profiles and student interest.
- Include activities that vary from simple to complex, concrete to abstract, structured to open-ended.

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- Instructional Strategies the Support Differentiation

5. Centres

In general, centres should…

- Provide clear directions for students.
- Offer instructions about what a student should do if she needs help.
- Include instructions about what a student should do when she completes a centre assignment.
- Use a record keeping system to monitor what students do at the centre and the quality of their work.

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- Instructional Strategies the Support Differentiation

6. Entry Points

Howard Gardner (multiple intelligences) has described "Entry Points" as a strategy for addressing varied intelligence profiles. He proposes student exploration of a given topic through as many as five avenues or Entry Points:

- Narration Entry Point: Presenting a story or narrative about the topic or concept in question.
- Aesthetic Entry Point: Focusing on the sensory features of the topic or concept.

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- Instructional Strategies the Support Differentiation

6. Entry Points

- Logical-Quantitative Entry Point: Using numbers or deductive / scientific approaches to the topic or question.
- Foundational Entry Point: Examining the philosophy and vocabulary that provide the foundations of the topic or concept.
- Experiential Entry Point: Using a hands-on approach where the student deals directly with materials that represent the topic or concept.

The Differentiated Classroom

- Instructional Strategies the Support Differentiation

7. Tiered Activities

Tiered activities are very important when a teacher wants to ensure that students with different learning needs work with the same ideas and use the same key skills. Teachers use tiered activities so all students focus on essential understandings and skills, but at different levels of complexity, abstractness and open-endedness.

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- Instructional Strategies the Support Differentiation

7. Tiered Activities

By keeping the focus of the activity the same, but providing routes of access at varying degrees of difficulty, the teacher maximises the likelihood that (1) each student comes away with pivotal skills and understandings and (2) each student is appropriately challenged.

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- Instructional Strategies the Support Differentiation

7. Tiered Activities

The following guidelines are useful for planning tiered activities:

- Select the concept(s), generalisation(s), and skill(s) that will be the focus of the activity for all learners. These are the elements the teacher knows are essential to helping students build a framework of understanding of the topic.

The Differentiated Classroom

- Instructional Strategies the Support Differentiation

7. Tiered Activities

The following guidelines are useful for planning tiered activities:

- Think about the students for whom you are planning the activity. Use assessments related to the upcoming lesson to help you think about the range of readiness for the topic. Add to that your awareness of students' talents, learning profiles, and interests.

The Differentiated Classroom

- Instructional Strategies the Support Differentiation

7. Tiered Activities

The following guidelines are useful for planning tiered activities:

- Create one activity, or draw on one you've successfully used in the past. It should be interesting, require high level thought, and clearly focus on elements that will cause students to use a key skill(s) to understand a key idea(s).

The Differentiated Classroom

- Instructional Strategies the Support Differentiation

7. Tiered Activities

The following guidelines are useful for planning tiered activities:

- Think about, or actually draw, a ladder. The top rung represents students with very high skill and high complexity of understanding. The bottom rung represents students with low skill and low complexity of understanding. In relation to student ability, decide where the lesson should be placed on the ladder. Once you visualise this ladder, you can see who needs another version of the lesson.

The Differentiated Classroom

- Instructional Strategies the Support Differentiation

7. Tiered Activities

The following guidelines are useful for planning tiered activities:

- "Clone" the activity along the ladder to provide different versions at different degrees of difficulty. There is no magic number of versions. Cloning occurs when (1) you vary materials students will use from basic to challenging (2) you allow students to express learning in ways that range from familiar to unfamiliar (3) you develop a range of applications from those that closely relate to students' experiences to those that are far removed.

The Differentiated Classroom

- Instructional Strategies the Support Differentiation

7. Tiered Activities

The following guidelines are useful for planning tiered activities:

- Match a version of the task to each student based on student need and task requirements. The goal is to match the task's degree of difficulty and its pacing to student readiness (though you want to stretch the student slightly beyond her comfort zone).

The Differentiated Classroom

- Instructional Strategies the Support Differentiation

8. Learning Contracts

There are many approaches to using learning contracts. Each approach includes an opportunity for students to work somewhat independently on material that is largely teacher-directed. In essence, a learning contract is a negotiated agreement between teacher and student that gives students some freedom in acquiring skills and understandings that a teacher deems important as a given time.

The Differentiated Classroom

- Instructional Strategies the Support Differentiation

8. Learning Contracts

Many learning contracts also provide opportunities for student choice regarding some of what is to be learned, working conditions, and how information will be applied or expressed.

The Differentiated Classroom

- Instructional Strategies the Support Differentiation

8. Learning Contracts

A contract…

- Assumes it is the teacher's responsibility to specify important learnings and make sure students acquire them.
- Assumes students can take on some of the responsibility for learning themselves.
- Delineates skills that need to be practiced and mastered.
- Ensures students will apply or use those skills in context.

The Differentiated Classroom

- Instructional Strategies the Support Differentiation

8. Learning Contracts

A contract…

- Specifies working conditions to which students must adhere during the contract time (student behaviour, time constraints, homework and classwork involvement).
- Sets positive consequences when students adhere to working conditions. It also sets negative consequences if students do not adhere to working conditions.

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- Instructional Strategies the Support Differentiation

8. Learning Contracts

A contract…

- Establishes criteria for successful completion and quality of work.
- Includes signatures of agreement to terms of the contract by both teacher and student.

The Differentiated Classroom

- Instructional Strategies the Support Differentiation

Other Strategies that Invite Differentiation

- Compacting.
- Problem-based Learning.
- Group Investigation.
- Independent Study.
- Choice Boards.
- 4MAT.
- Portfolios.

The Differentiated Classroom

How Do Teachers Make It All Work?

Getting Started

- Examine your philosophy about individual needs.
- Start small.
- Grow slowly – but grow.
- Envision how an activity will look.
- Step back and reflect.
- Talk with students early and often.
- Continue to empower students.
- Continue to be analytical.

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◆ How Do Teachers Make It All Work?

Some Practical Considerations

- Start the class with a familiar task. Once students settle in, meet with one small group at a time to give directions for differentiated tasks.
- Give directions today for tomorrow. Give directions to a careful listener and a careful follower in each group. They can give directions to their group when the task begins tomorrow.
- Use task cards. Students go to assigned locations in the classroom and find out what to do by reading a carefully written task card.

The Differentiated Classroom

◆ How Do Teachers Make It All Work?

Some Practical Considerations

- Instead of / in addition to using task cards, give students instructions through recorded messages.
- Put directions on flipcharts / Keynote slides / PowerPoint slides.
- Think twice before introducing a completely new format in a small-group task. For example, it makes better sense to use graphic organisers several times with the whole class before you ask a small group to use them.

The Differentiated Classroom

◆ How Do Teachers Make It All Work?

Some Practical Considerations

➢ Make yourself “off limits” at strategic times in the instructional sequence. For example, you may want to make it standard procedure that no one can ask you any questions during the first five minutes of any activity. That way, you can walk among students, making sure they settle down and have their materials. You won’t be cornered by one student, giving others the opportunity to remain off task. You also need uninterrupted time for meeting with small groups and individuals.

The Differentiated Classroom

- A Planning Model for Academic Diversity and Talent Development

Content	Process	Product
• Concept and generalisation-based. • High relevance. • Coherent. • Transferable. • Powerful. • Authentic.	• Concept and generalisation driven. • Focused. • High level. • Purposeful. • Balancing critical and creative thought. • Promoting cognition and metacognition.	• Concept or issue centred. • Skills of planning taught. • Skills of production taught. • Requires application of all key skills and understandings. • Uses skills of the discipline. • Real problems/audience. • Multiple modes of expression.

The Differentiated Classroom

- A Planning Model for Academic Diversity and Talent Development

Content	Process	Product
Differentiation through… • Multiple texts and print resources. • Varied computer programs. • Varied audio-visual. • Varied time allotments. • Interest centres. • Compacting. • Complex instruction. • Group investigation.	Differentiation through… • Tiered assignments. • Learning centres. • Multiple intelligences assignments. • Graphic organisers. • Simulation. • Learning logs. • Concept development. • Complex instruction. • Group investigation.	Differentiation through… • Tiered product assignments. • Independent study. • Community-based products. • Negotiated criteria. • Graded rubrics. • Multiple intelligences-based orientations. • Group investigation.

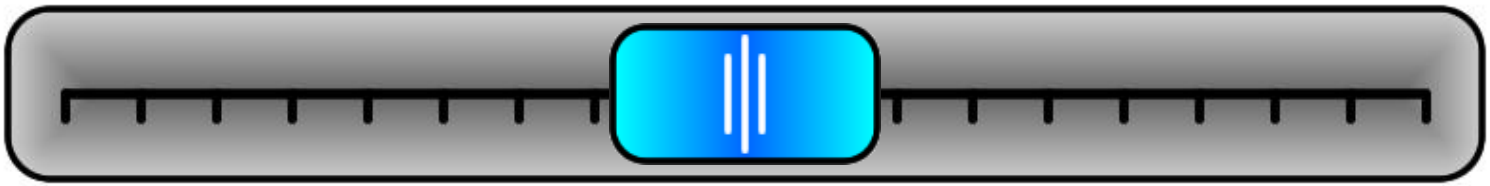
The Differentiated Classroom

◆ Model to Guide Differentiated Instruction

- The diagram below represents a button on a stereo which a listener would use to adjust settings such as volume, tone and balance.

LEVEL OF DIFFICULTY

L O W



H I G H

- Such mechanisms are called “equalisers.” To differentiate for learner readiness, the teacher should begin with solid, focussed, significant instruction. The teacher should then move the equalisers towards the left or right, depending on the learner’s starting point. As with a stereo, it is not necessary to move all of the equalisers at once.

The Differentiated Classroom

- Model to Guide Differentiated Instruction #1

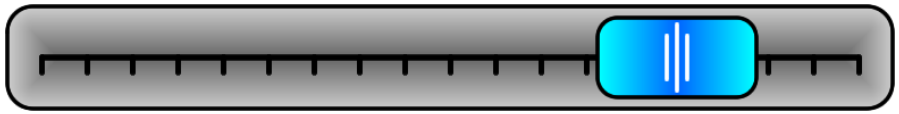
Fundamental  **Transformational**

Information, Ideas, Materials, Applications

• Close to text or experience • Export idea and skill to similar or familiar setting. • Use key idea or skill alone. • Fundamental skill and knowledge emphasised. • Fewer permutations of skills and ideas.	• Removed from text or experience. • Export idea or skill to unexpected or unfamiliar setting. • Use Key idea or skill with unrelated idea or skill. • Move beyond fundamental skills and knowledge. • More permutations of skills and ideas.

The Differentiated Classroom

- Model to Guide Differentiated Instruction #2

Concrete  **Abstract**

Representations, Ideas, Applications, Materials

• Hold in hands or hands-on.	• Hold in mind or minds-on.
• Tangible.	• Intangible.
• Literal.	• Symbolic or metaphorical.
• Physical manipulation.	• Mental manipulation.
• Event based.	• Idea based.
• Event to principle.	• Principle without event.
• Demonstrated and explained.	• Not demonstrated or explained.

The Differentiated Classroom

- Model to Guide Differentiated Instruction #3

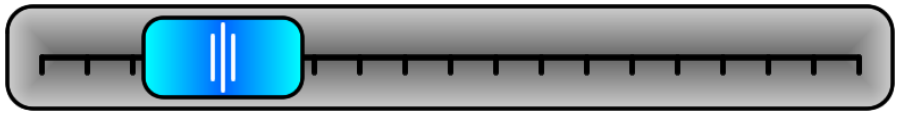
Simple  **Complex**

Resources, Research, Issues, Problems, Skills, Goals

• Use idea or skill being taught. • Work with one or few abstractions. • Emphasises appropriateness. • Requires relatively less originality. • More common vocabulary. • More accessible readability.	• Combine idea or skill being taught with those previously taught. • Work with multiple abstractions. • Emphasises elegance. • Requires relatively more originality. • More advanced vocabulary. • More advanced readability.

The Differentiated Classroom

- Model to Guide Differentiated Instruction #4

Single Facet  **Multiple Facets**

Disciplinary Connections, Directions, Stages of Development

• Fewer parts. • Fewer steps. • Fewer stages.	• More parts. • More steps. • More stages.

The Differentiated Classroom

- Model to Guide Differentiated Instruction #5

Small Leap

Great Leap

Application, Insight, Transfer

• Few unknowns. • Relative comfort with most elements. • Less need to change familiar elements. • Requires less flexible thought. • Few gaps in required knowledge. • More evolutionary.	• Many unknowns. • Relative unfamiliarity with many elements. • More need to change familiar elements. • Requires more flexible thought. • Many gaps in required knowledge. • More revolutionary.

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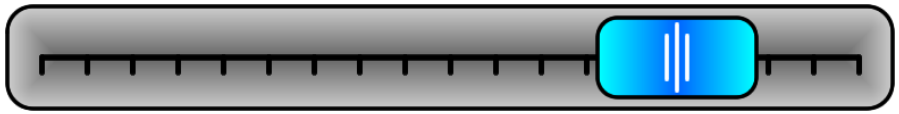
- Model to Guide Differentiated Instruction #6

More Structured  **More Open**

Solutions, Decisions, Approaches

• More directions or more precise directions. • More modelling. • Relatively less student choice.	• Fewer directions. • Less modelling. • Relatively more student choice.

The Differentiated Classroom

- Model to Guide Differentiated Instruction #7

Clearly Defined Problems

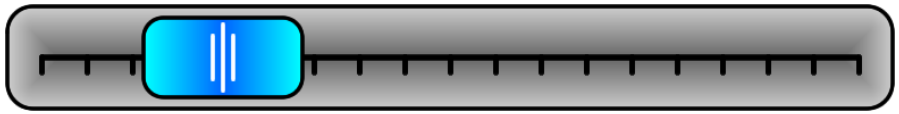
Fuzzy Problems

In Process, In Research, In Products

• Few unknowns. • More algorithmic. • Narrower range of acceptable responses or approaches. • Only relevant data provided. • Problem specified.	• More unknowns. • More heuristic. • Wider range of acceptable responses or approaches. • Extraneous data provided. • Problem unspecified or ambiguous.

The Differentiated Classroom

- Model to Guide Differentiated Instruction #8

Less Independence  **Greater Independence**

Planning, Designing, Monitoring

• More teacher or adult guidance and monitoring on…	• Less teacher or adult guidance and monitoring on…
➢ Problem identification & goal setting.	➢ Problem identification & goal setting.
➢ Establishing & following timelines.	➢ Establishing & following timelines.
➢ Securing & using resources.	➢ Securing & using resources.
➢ Criteria for success.	➢ Criteria for success.
• More teacher scaffolding.	• Less teacher scaffolding.
• Learning skills of independence.	• Demonstrating skills of independence.

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- Model to Guide Differentiated Instruction #9

Slower  Quicker

Pace of Study, Pace of Thought

• More time to work. • More practice. • More teaching and re-teaching. • Process more systematically. • Probe breadth and depth.	• Less time to work. • Less practice. • Less teaching and re-teaching. • Process more rapidly. • Hit the high points.

The Differentiated Classroom

The Differentiated Classroom

◆ Key Principles of a Differentiated Classroom

- The teacher is clear about what matters in subject matter.
- The teacher understands, appreciates, and builds upon student differences.
- Assessment and instruction are inseparable.
- The teacher adjusts content, process and product in response to student readiness, interests, and learning profile.

The Differentiated Classroom

◆ Key Principles of a Differentiated Classroom

- All students participate in respectful work.
- Students and teachers are collaborators in learning.
- Goals of a differentiated classroom are maximum growth and individual success.
- Flexibility is the hallmark of the differentiated classroom.

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How do I differentiate instruction?

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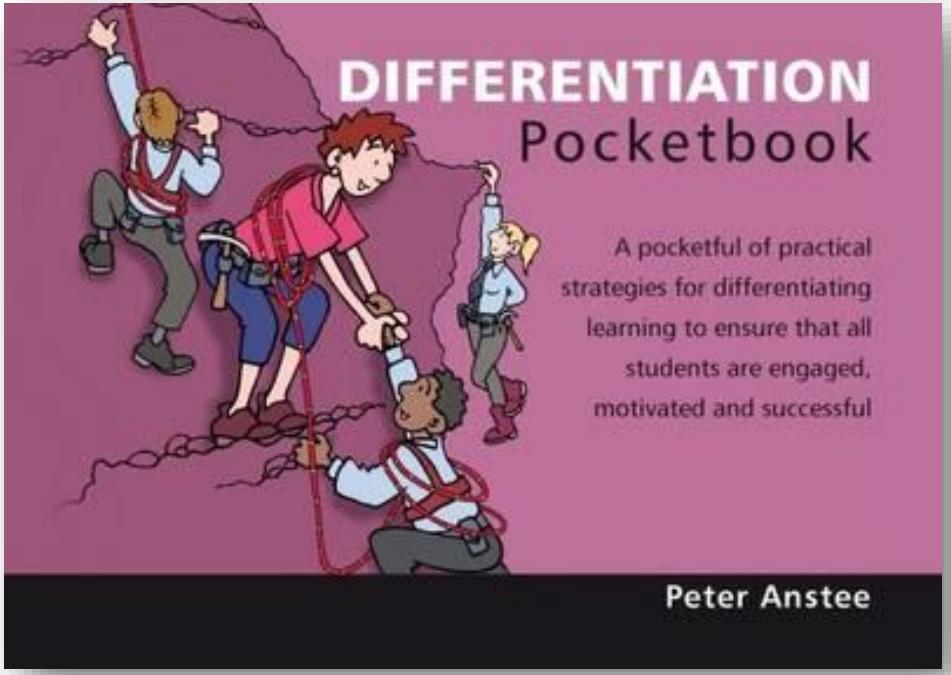
- Brief Online Resources



http://www.chemist.sg/classroom/index.html

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What are the *seven T's* of practical differentiation?

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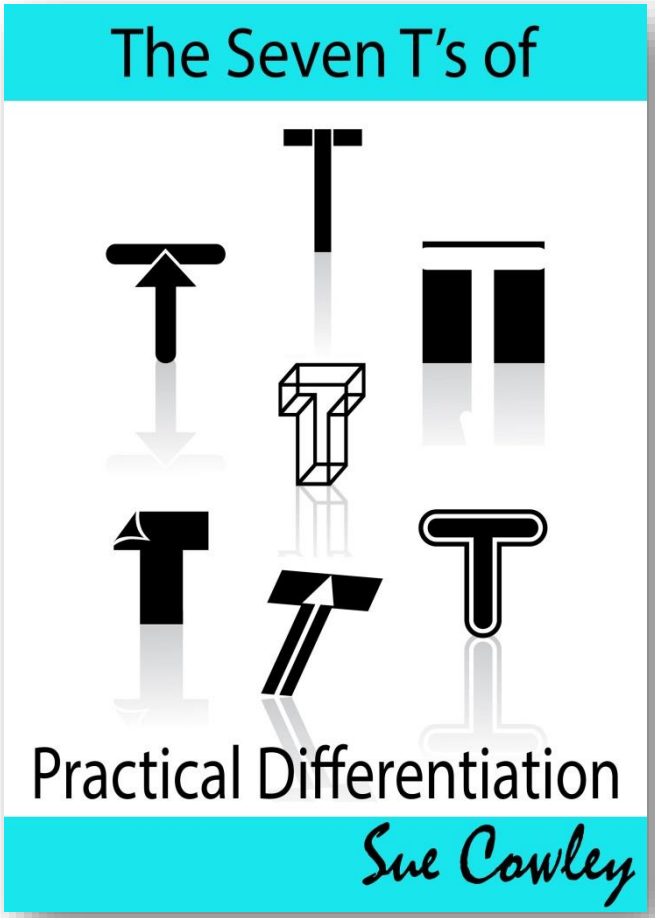

1. Top and Tail.
2. Time.
3. Targets.
4. Teamwork.
5. Thinking Skills.
6. Things.
7. Technology.

The Differentiated Classroom

1. Top and Tail

- Techniques for the Able Students

- Ask them to do more of the activity than the rest of the class, for example, complete eight questions rather than five in the same amount of time.

- Get them to do a more difficult version of the activity, for example, completing five sums using three digit numbers rather than five sums using two digit numbers.

- Ask them to do the same activity, but with an added twist that makes the task more challenging or complex. For example, give the activity a real world context which makes it slightly more difficult to complete.

The Differentiated Classroom

1. Top and Tail

- Tasks to Stretch More Able Students when they Complete a Task Early

➢ Get them to teach what they have learned during the activity to someone else (less able or less motivated) within the class.

➢ If several students have simultaneously, ask them to swap worksheets and critique / write comments on each others work.

➢ Get them to devise a new and different version of the skill you have been learning about in the lesson.

The Differentiated Classroom

1. Top and Tail

- Techniques for the Weakest Students

- When preparing a worksheet, create a second version for those students who need extra support. For example, add a text box with definitions of key words or equations.
- Partner students up with “study buddies” so that they always have someone to turn to when they are unsure about an activity.
- Film yourself delivering an explanation of a topic and allow your less able students to watch the clip several times, as required.

The Differentiated Classroom

2. Time

- Adapt the amount of time you give different groups of students to complete the same activity.
- Give your students a series of activities to complete within a lesson, ones that gradually increase in difficulty. Set the challenge of seeing how far they can get in the lesson time. You could set a target for the amount they must complete, you could get the students to decide on a target for themselves, or you could set this up as a competition to see who can complete the most.

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2. Time

- Set some activities with very short time spans – 30 seconds, one minute or two minutes at the most. This creates a powerful sense of pace and is a great way to stretch the thinking of the most able and to push the poorly motivated.

- Sometimes give worksheets or printed materials out *before* the lesson. The more able students could complete the work at home and then do additional follow-up activities in class. Less able students could use the time to read through the worksheet in preparation for the lesson.

The Differentiated Classroom

3. Targets

- When you are working out the learning objectives for a lesson, consider whether it is (or should be) the same for everyone. Have some of the students already achieved the objective you had planned to set? If so, consider whether they need to revisit it, or whether you should be creating a different kind of learning goal for them.
- Consider setting several layers of learning objectives in your lessons. Have one main objective that you want to ensure everyone achieves, then one or more others that you will try to achieve with the most able students. A good way to define this in your lesson plan is "*All must*… …*some may*… …*few might*…"

The Differentiated Classroom

3. Targets

- If you are struggling to find time to differentiate every lesson, set yourself the target of three lessons a week where you will focus really strongly on creating differentiated learning activities.
- Alternatively, nominate one or two students each week as your “differentiated learners”. When you plan an activity for the whole class, figure out one way to differentiate the learning so that it will particularly suit these individual learners.

The Differentiated Classroom

3. Targets

- Set yourself the goal of speaking to every single child in your class in every single lesson that you teach.
- When using praise, make it very specific. What exactly did the student do well? What previously agreed target did they achieve?
- Find the time to get your students to create personalised targets, preferably at the start of term. Encourage your students to think about and analyse their strengths and weaknesses. What do they do well right now? Where is there room for improvement? Students may benefit from setting SMART goals.

The Differentiated Classroom

4. Teamwork

- Encourage your students to take individual responsibility for the learning of the whole group. In addition, encourage the students to give you feedback on their own learning.
- Refuse point-blank to allow students to be disparaging to each other. Deal firmly with every single example of negative or uncooperative attitude.
- Choose group activities that require all members to make an individual contribution in order to be successful.

The Differentiated Classroom

4. Teamwork

- Think carefully about which students should go in which groups. Sometimes you will want to group by ability, particularly when you are setting different tasks for different groups. At other times you may want to mix abilities within groups and specify different roles for different group members. Sometimes you may wish to use a random method of grouping.

- Teacher Talkers: One group receives additional teacher talk time. This may usually be the lowest ability group, but other times it is a top or middling group that gets additional guidance / information from the teacher.

The Differentiated Classroom

4. Teamwork

- Expert Groups: The teacher divides up a topic into various areas, and gives each group one area on which to focus or research. Individual groups summarise and teach what they have learned to the class. Note: differentiate by giving more difficult / complex areas to the groups of more able students.

- Focus Groups: The students are given a specific focus for the learning that is going to take place within the group. For example, use *Edward de Bono's "Thinking Hats"* approach with one group wearing the white hat and looking at facts, while another group wears the green hat and takes a more creative approach.

The Differentiated Classroom

- Edward de Bono's Six Thinking Hats

The Differentiated Classroom

4. Teamwork

- Jigsaw Groups: The activity is split-up into parts, and the children within the group each get one part on which to focus. They share their with the children from other groups who are focussing on the same part. The children then create the “jigsaw” – the overview of the topic – created by slotting the pieces together.

- Self-chosen Groups: The teacher identifies four aspects of a topic to be covered, or alternatively gives four problems or questions for the class to explore. The teacher allocates one corner of the classroom for each aspect of the topic. Students move to the appropriate corner depending upon what they want to cover.

The Differentiated Classroom

5. Thinking Skills

- In order to differentiate effectively, the teacher must plan the learning so that all of their students can access it at the most appropriate level. This means using lots of creativity and lateral thinking because the teacher will have to come at the “problem” of differentiation from many different angles.
- Sometimes lessons are about learning new facts, remembering facts learned previously, practicing old skills or learning new ones. In these lessons, the students will be using mainly lower order thinking skills. When the students are using mainly lower order thinking skills within a lesson, the teacher must do the higher order thinking to differentiate the tasks for the students.

The Differentiated Classroom

5. Thinking Skills

- When planning lessons that encourage the use of higher order thinking skills, the students can access and complete the activities at a variety of different levels of complexity. In other words, the students will naturally differentiate many higher order activities by virtue of their own approach to those activities.

- Higher order thinking skills include lateral and creative thinking, theorising, deduction, evaluation, reflection and so on. These higher order skills are about using and applying knowledge and skills in new contexts or situations.

The Differentiated Classroom

5. Thinking Skills

- Higher order thinking is about *actively* thinking and learning, rather than *passively* learning from the teacher. When students understand *what* they are learning, *why* they are learning it, and they have some measure of choice in *how* they learn it, then they are far more likely to engage their higher order thinking skills.

The Differentiated Classroom

5. Thinking Skills

- Choice and Thinking Skills: At appropriate times, give your students an element of choice in their own learning. Encourage them to consider how they prefer to learn, and also how they personally learn best. You can offer your students choices about what, how, when and where they wish to learn. By offering choices, you ask the students to play their part in differentiating learning.

The Differentiated Classroom

5. Thinking Skills

- It is valuable to offer choices around learning because…

→ It helps students to build the skill of *metacognition* – the ability to think about their own thinking.

→ It encourages students to use their higher order thinking skills, as they analyse and evaluate their preferred approaches to learning.

→ It can be helpful for increasing motivation, as most individuals like to have a measure of control over what happens to them.

The Differentiated Classroom

5. Thinking Skills

➢ To incorporate more choice into your classroom…

→ Offer a number of different formats in which a task can be completed – as a report, as a poster, as an essay, as a letter, as a blog entry, and so on.

→ Give a choice of resources with which to work: books, magazines, pamphlets, websites, newspapers, podcasts, films and so on.

→ Colour-code tasks. Red equals hard, amber equals a medium level of difficulty and green is an easy task. All students should complete one red task. More able students should complete at least two.

The Differentiated Classroom

5. Thinking Skills

➢ To incorporate more choice into your classroom…

→ Offer choices about how students will learn about a topic area. For example, they could choose the order in which they learn the various parts of the topic. They could also choose the area of the topic that they would like to study in the most detail.

→ Use a “work stations” approach, setting-up several different activities within the classroom. The students could choose from these as they wish, spending as much time as they need at each particular work station.

The Differentiated Classroom

5. Thinking Skills

- How to Encourage Risk Taking: The ability to take risks is a key aspect in certain types of higher order thinking – particularly within imaginative, creative and lateral thinking, but also when extending logical and critical ideas. Indeed, we need to take risks to learn anything new, because we can never be good at something without getting it wrong several times first. You need to encourage your students to see mistakes as a way to learn, rather than as something to be avoided.

→ Use activities about the process, not the end product.

→ Praise the willingness to make mistakes.

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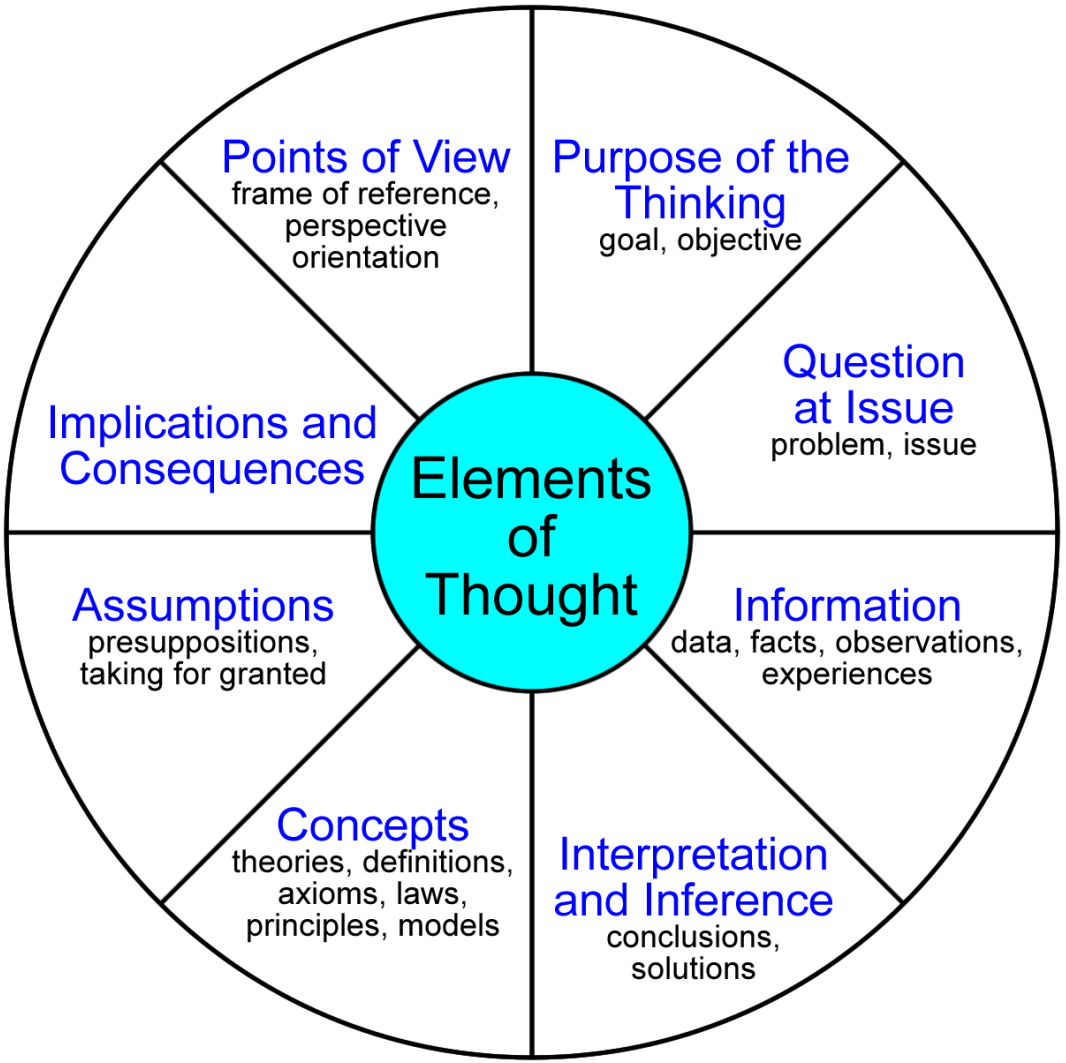
Richard Paul's Wheel of Reason



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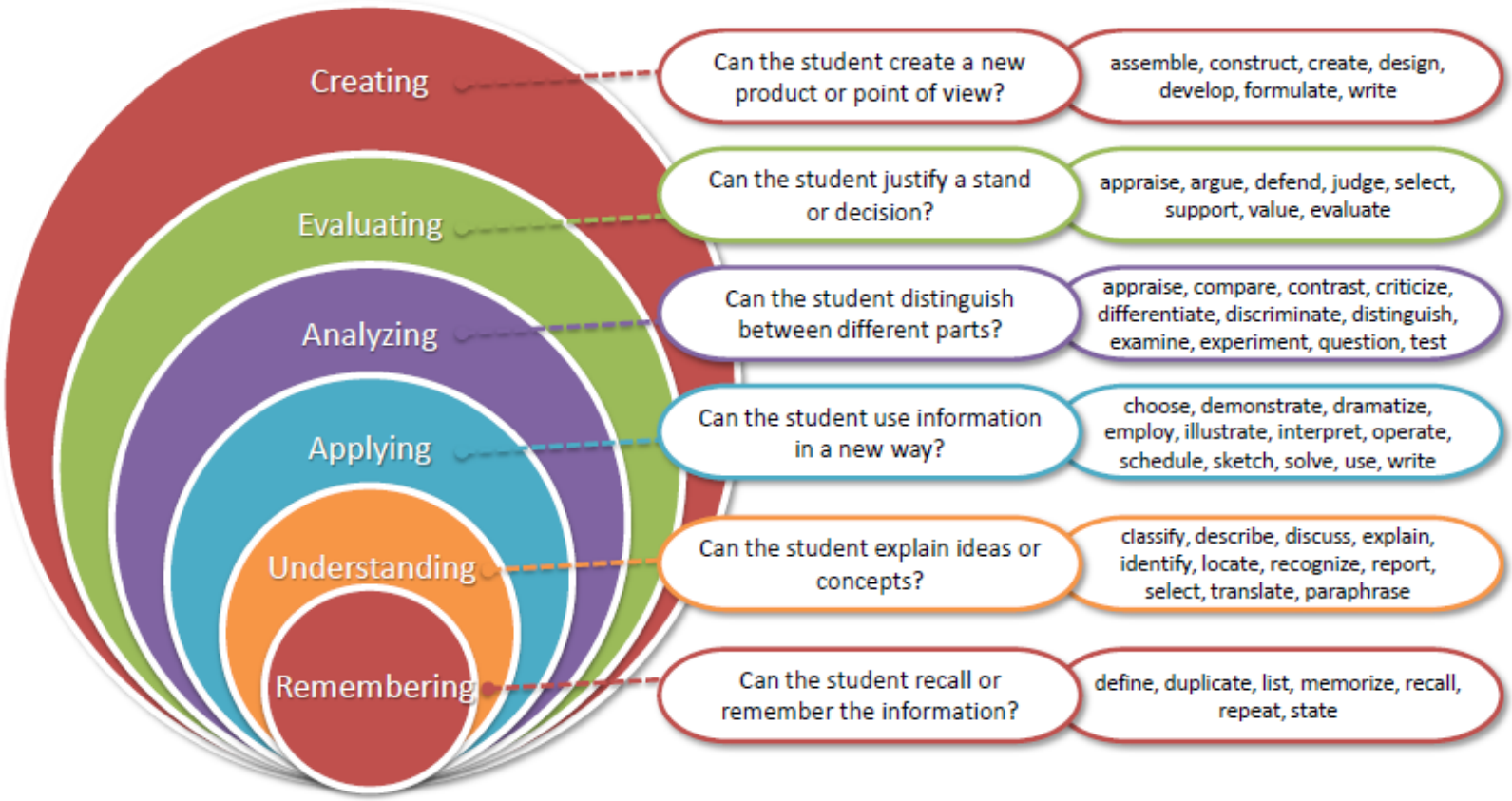
Bloom's Taxonomy (Revised)



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6. Things

- "Things" – or to use the more technical sounding term "resources" – are a good way to differentiate for students. The umbrella term "resources" can include a host of different things, possibly something used to inspire and motivate the students such as a fascinating object or really interesting text.

The Differentiated Classroom

6. Things

- The best resources for differentiation (and generally, for high quality teaching and learning) are those which…

→ Trigger the students to use their higher order thinking skills.

→ Encourage the teacher to use his or her higher order thinking skills.

→ Create a sense of interest and curiosity within the students.

→ Relate to the experience and interests of the teacher / students.

The Differentiated Classroom

6. Things

- The best resources for differentiation (and generally, for high quality teaching and learning) are those which…
  - → Bring a sense of the real world into the classroom.
    - → Offer the students a multi-sensory experience.
      - → Sometimes originate from the students.
  - → Are something that you would not normally expect to see in the classroom.

The Differentiated Classroom

7. Technology

- In recent years, new technologies have opened-up a whole new world of possibilities for differentiated learning. Technology offers a real chance to match the learning more closely to the child.
- Laptops and Tablets: By using laptops and tablets, the teacher can let the students work at their own pace, using a variety of software programmes and applications.
- Educational Websites: Many educational websites use graphics and interactive animations. These are typically very appealing to less able students.

The Differentiated Classroom

7. Technology

- Video / Audio Clips and Podcasts: Beyond using textbooks and worksheets, video / audio clips and podcasts are a relatively novel way of presenting information to students. Less able students can watch / listen to the information as many times as required.
- Recording Devices: Students can record their learning using digital cameras / video cameras. Students can keep the recordings for study / revision and can share the recordings by uploading them into a blog or virtual learning environment.

The Differentiated Classroom

7. Technology

- Virtual Learning Environments: Using a virtual learning environment (VLE) both teachers and students can upload examples of work, share ideas and information and take online assessments.

The Differentiated Classroom

7. Technology

➢ Graphics and Differentiation:

→ Encourage students to use photos as a way to present their learning, for example, taking photographs of the steps in a science experiment.

→ Take photographs of good examples of learning and share them with your students.

→ Post *QR codes* around the school and send students on a hunt for information using their hand phones / tablets. *QR codes* can also be incorporated into worksheets – a student who needs extra help scans the code to access additional resources.

The Differentiated Classroom

→ Encou to present their learn f the steps

→ Take ing and

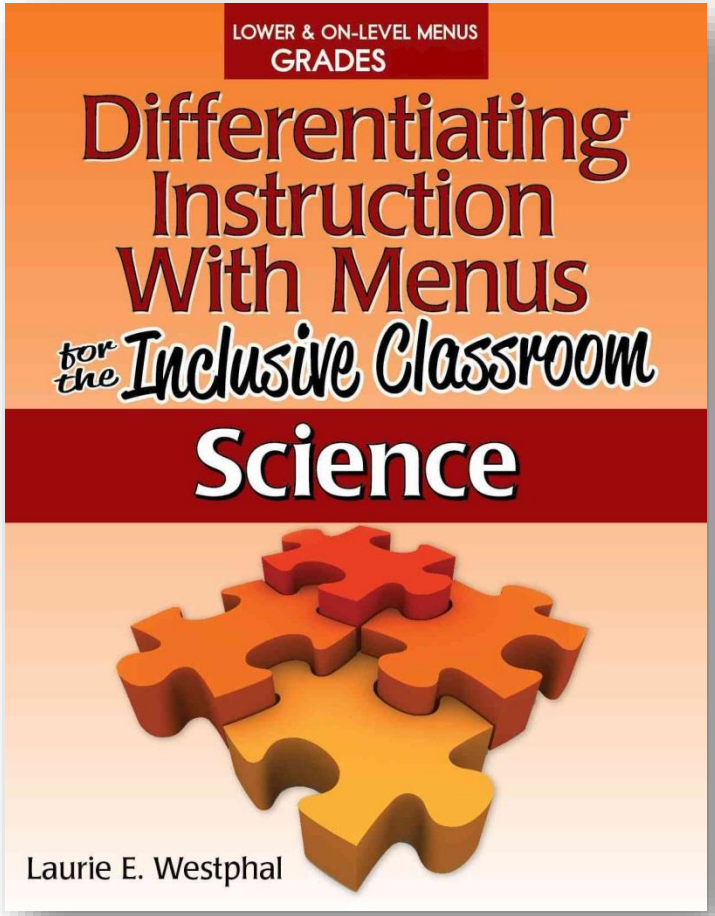
→ Post *QR* dents on a hunt for ir blets. *QR codes* can a a student who needs ditional

NANYANG GIRLS' HIGH

The Differentiated Classroom

Differentiating Instruction with *Menus*

The Differentiated Classroom



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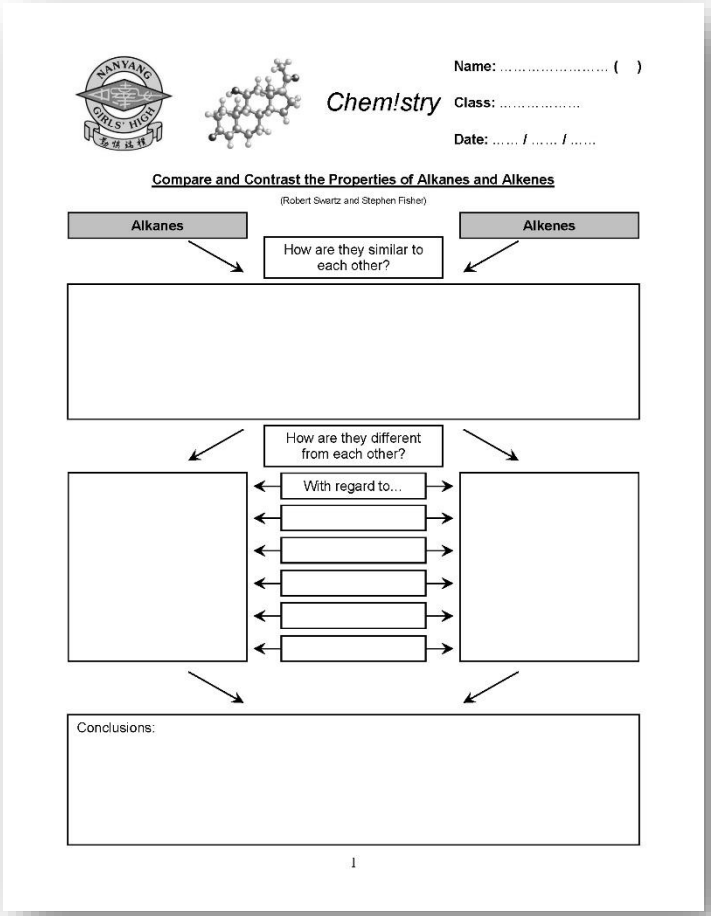
- Differentiating Instruction with Menus



Chem!stry

Name: ..... ( )

Class: .....

Date: ..... / ..... / .....

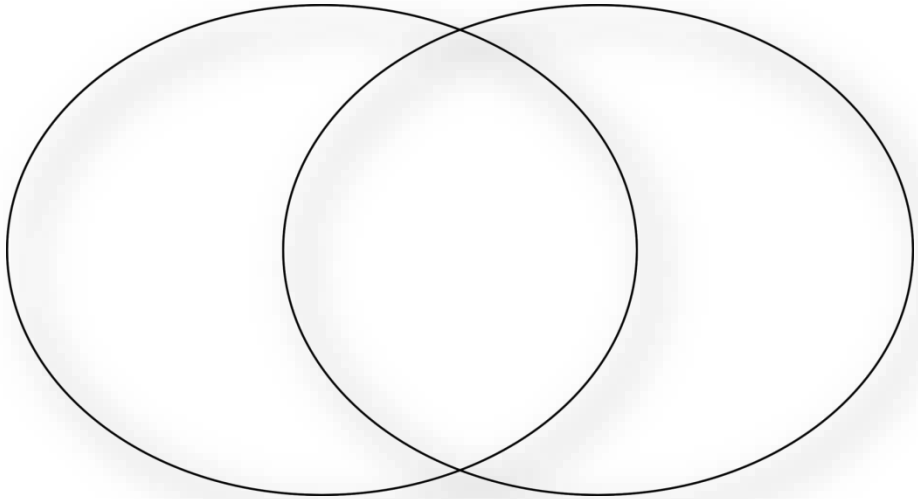
Compare and Contrast the Properties of Alkanes and Alkenes

(Robert Swartz and Stephen Fisher)

Alkanes		Alkenes
	How are they similar to each other?	
	How are they different from each other?	
	With regard to...	

Conclusions:

1



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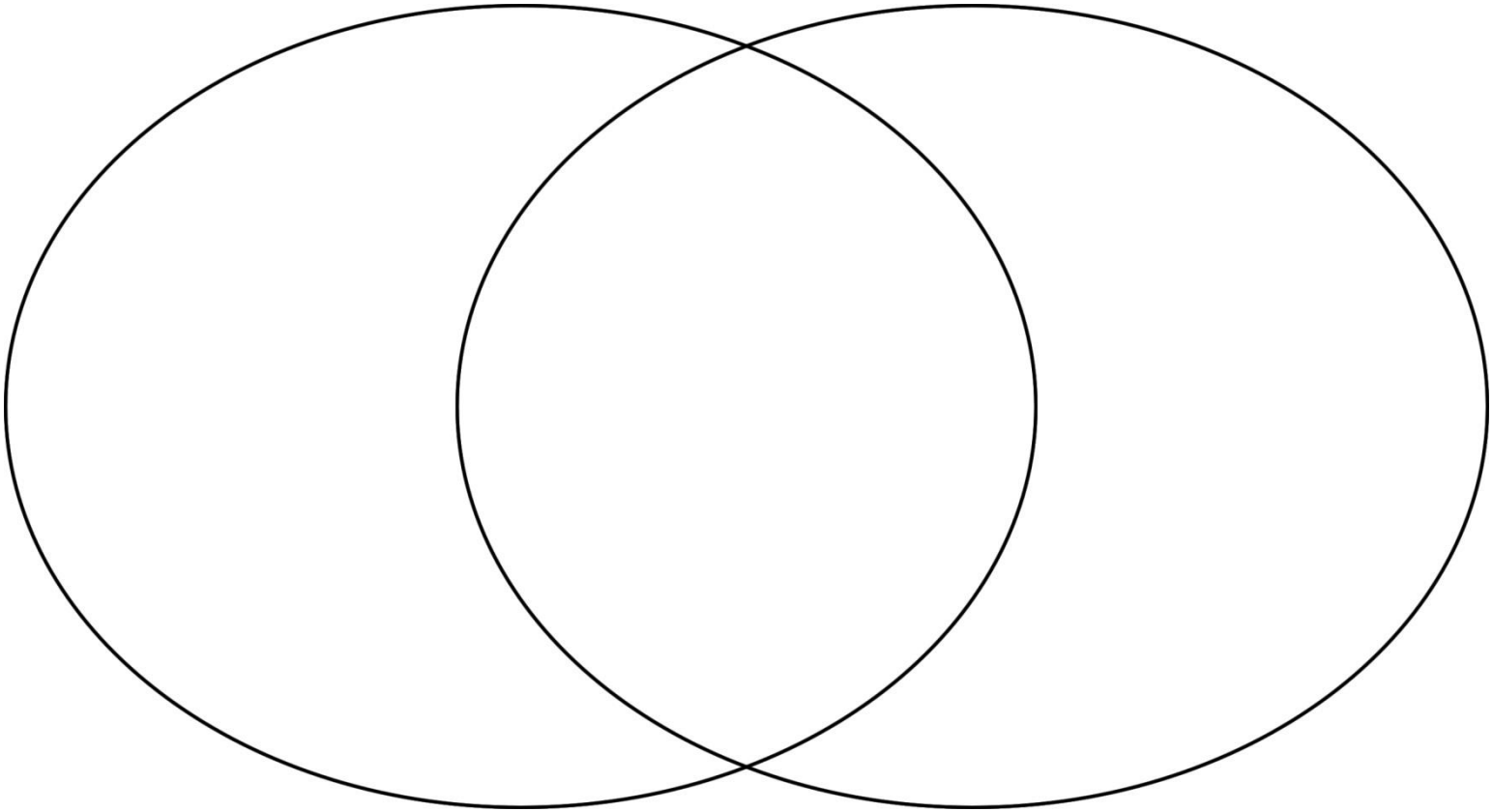
- Differentiating Instruction with Menus



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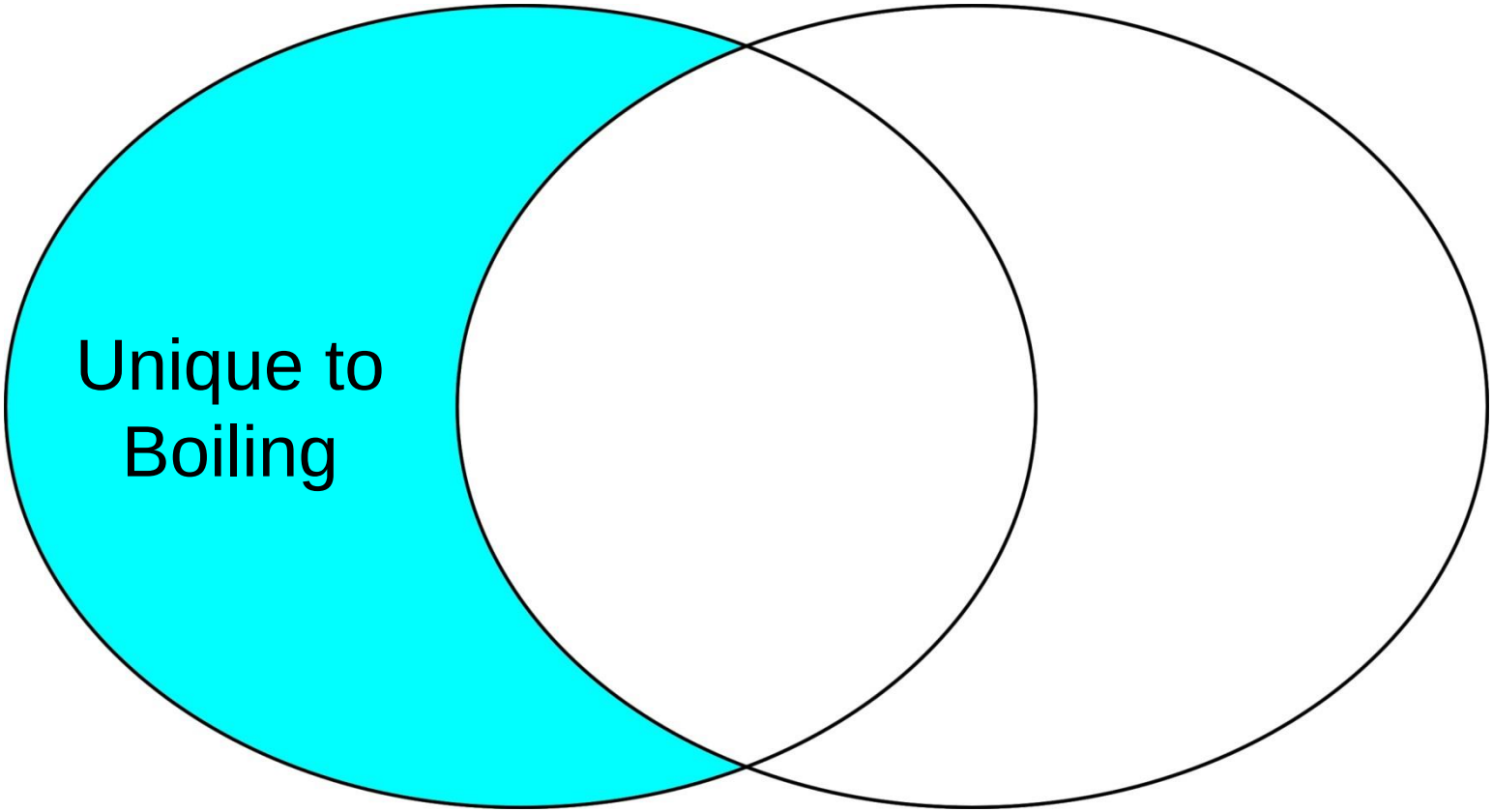

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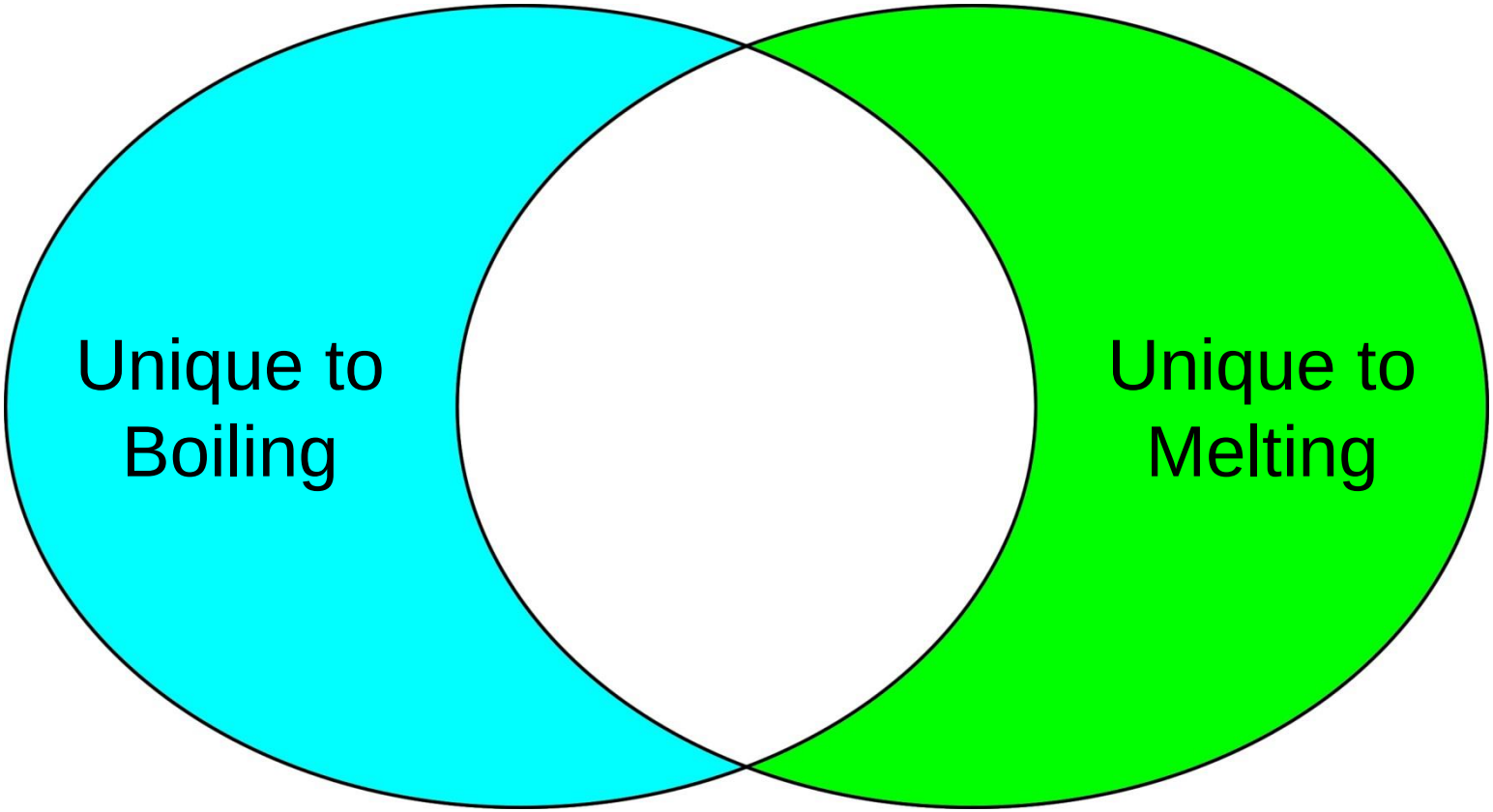

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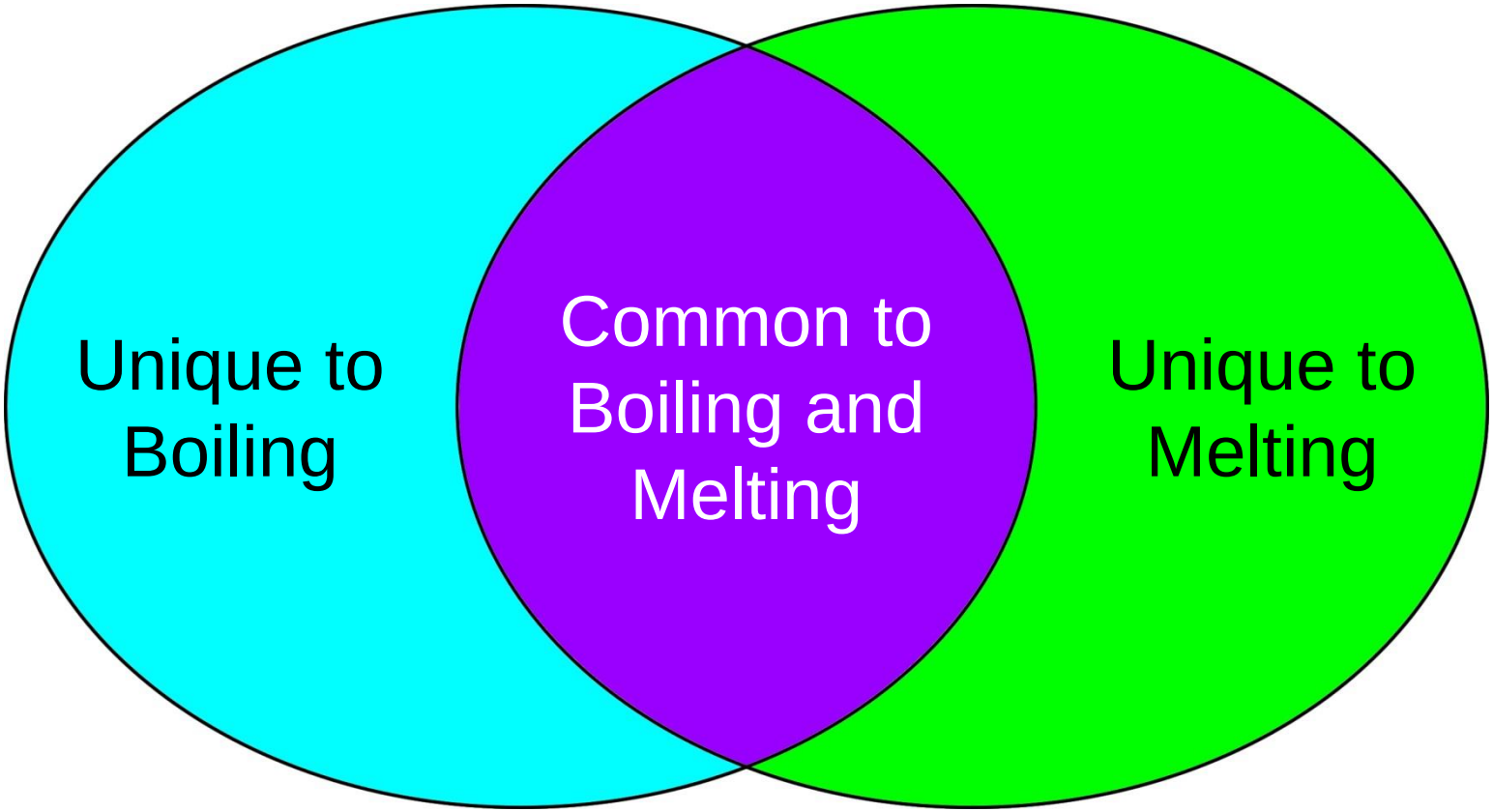

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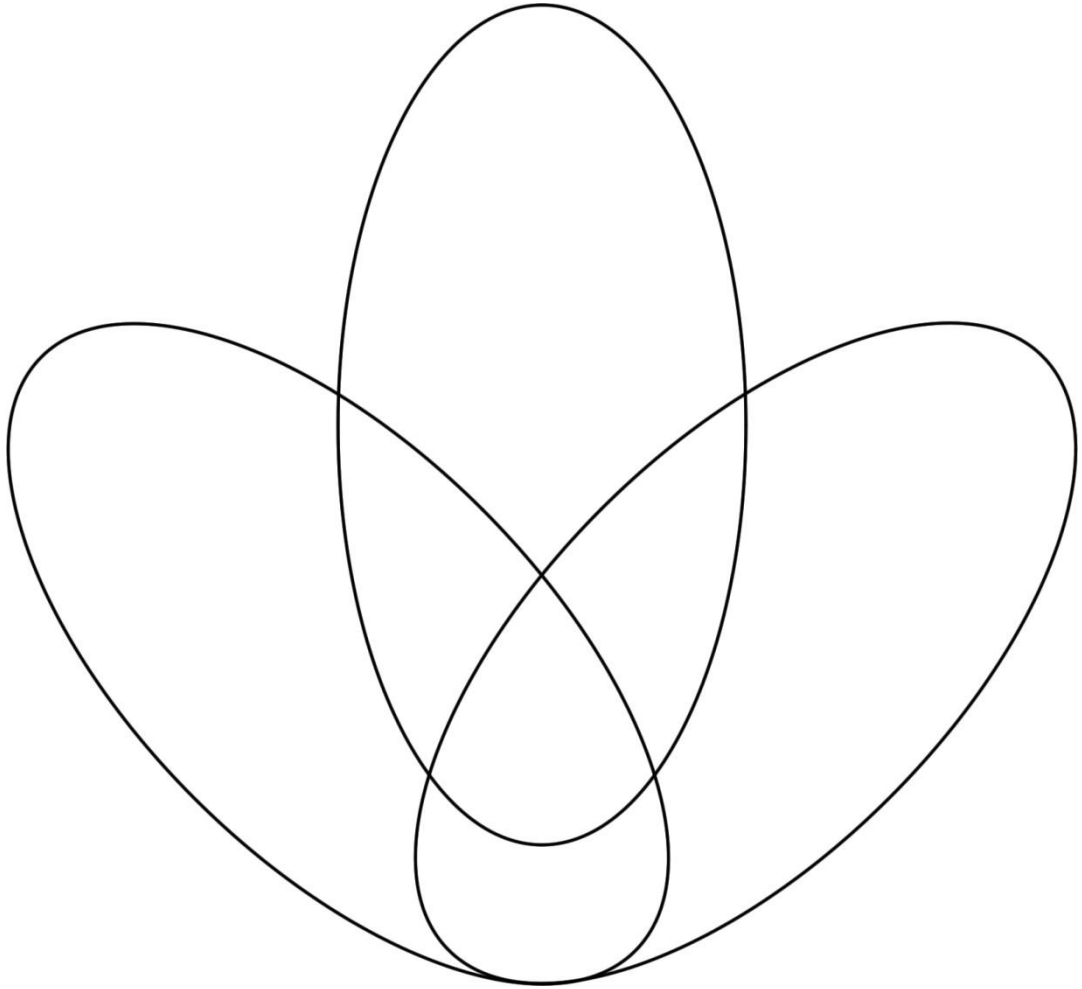

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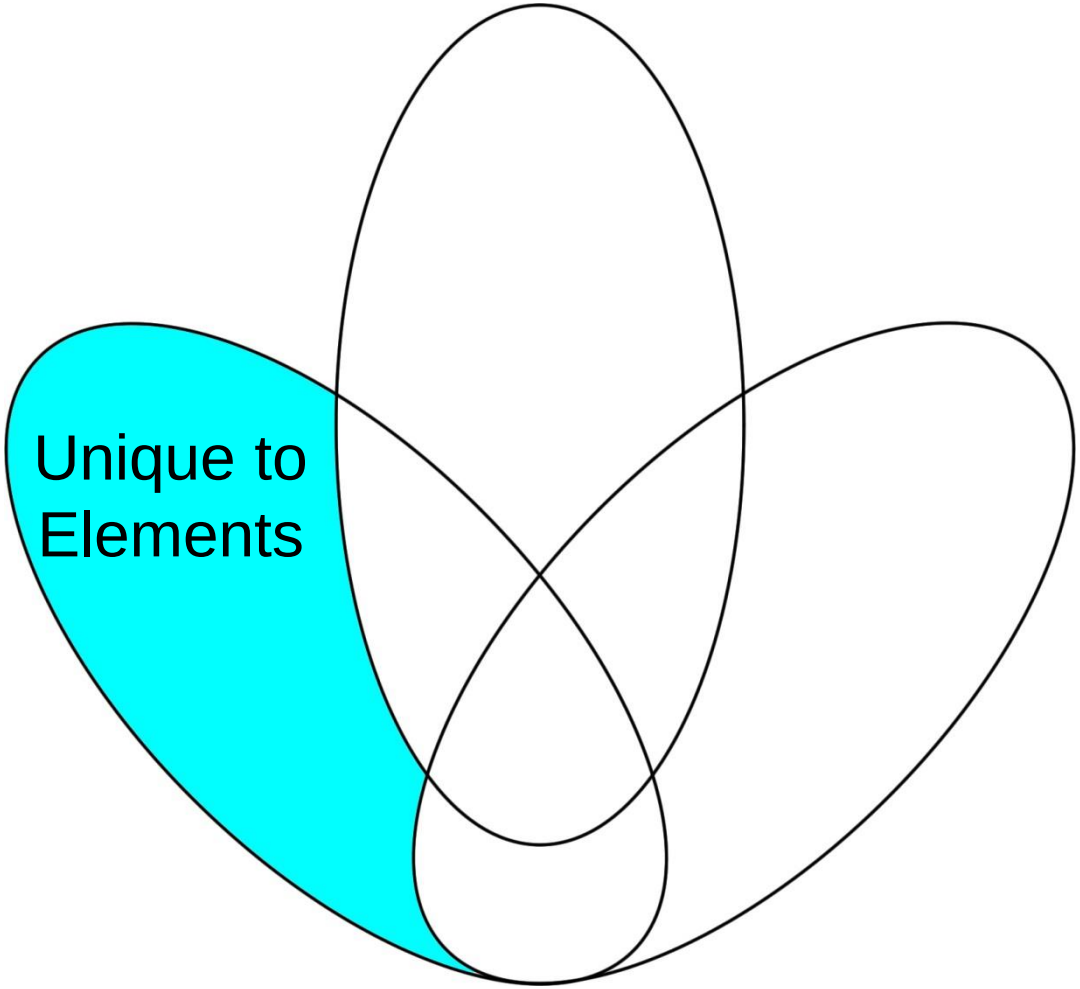

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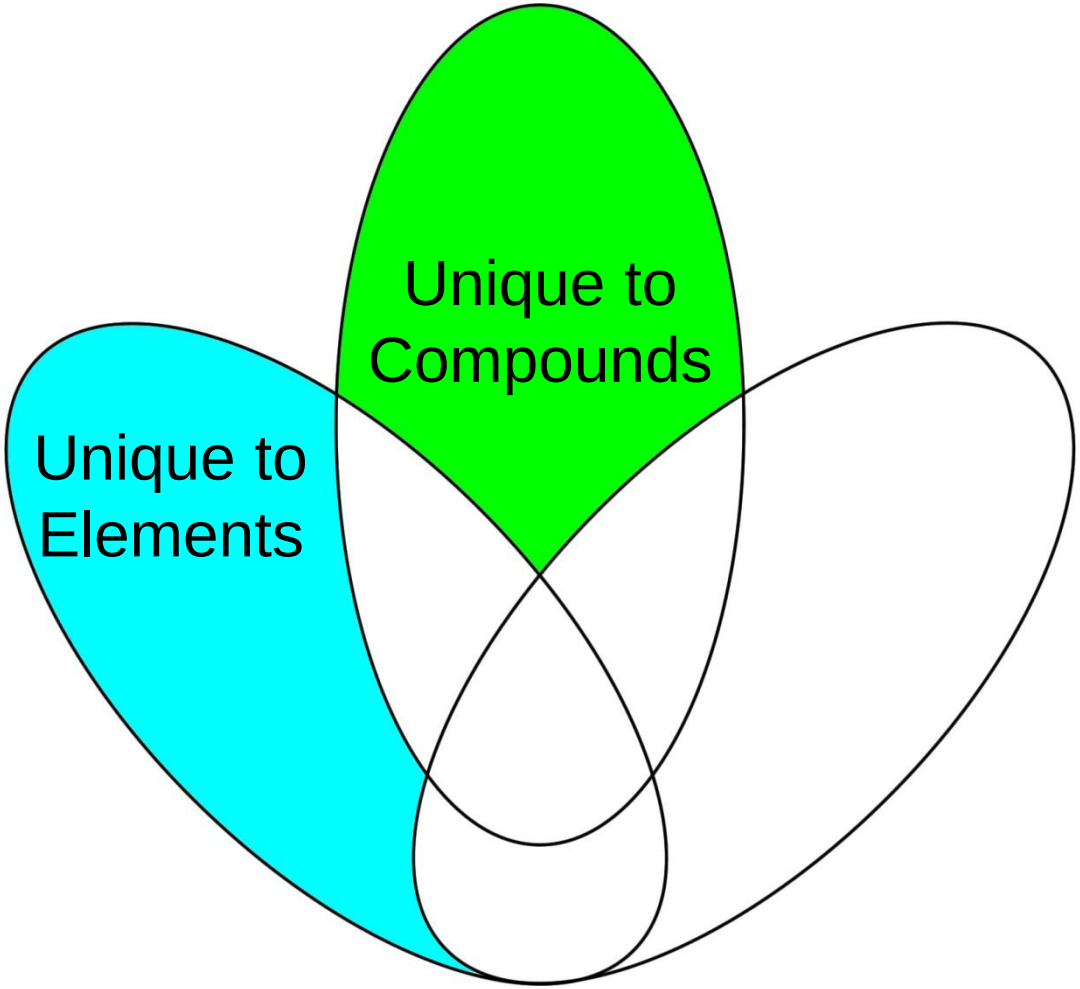

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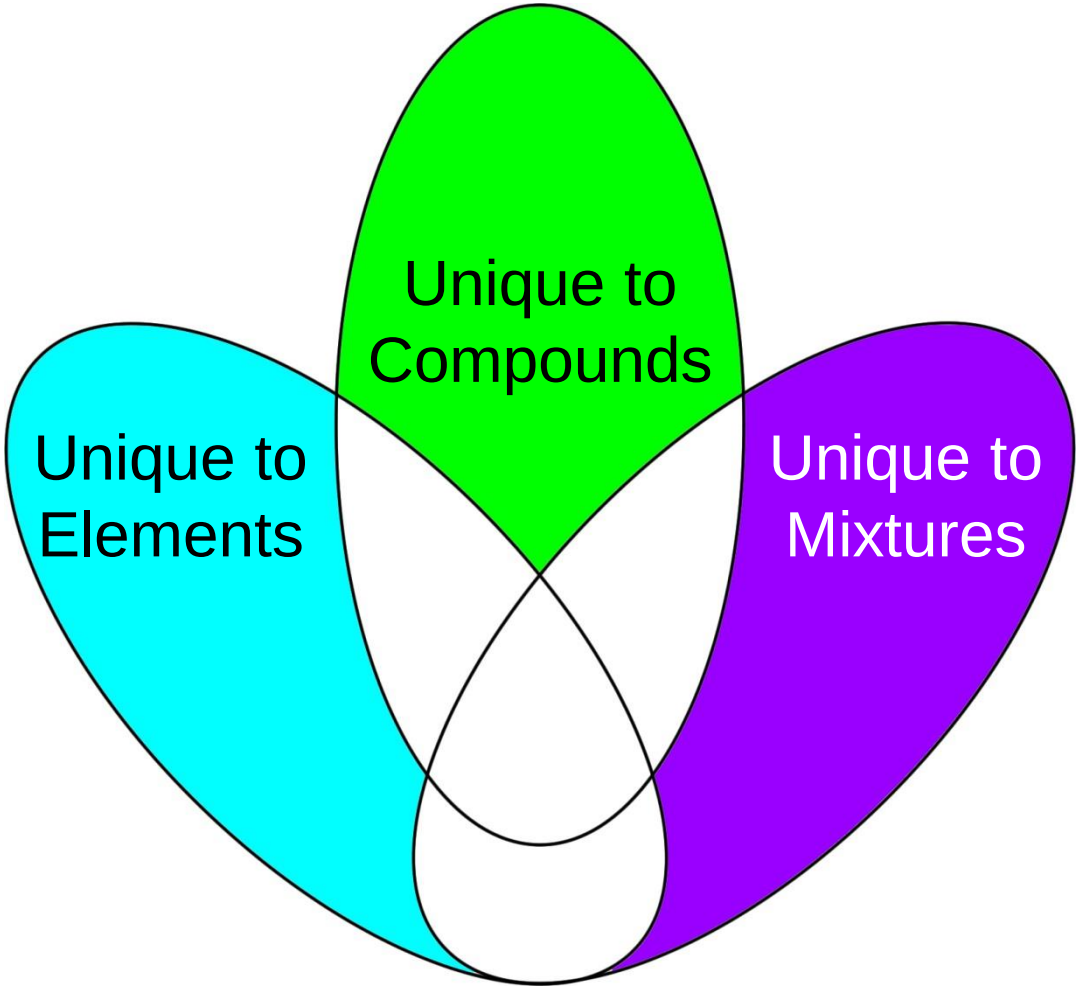

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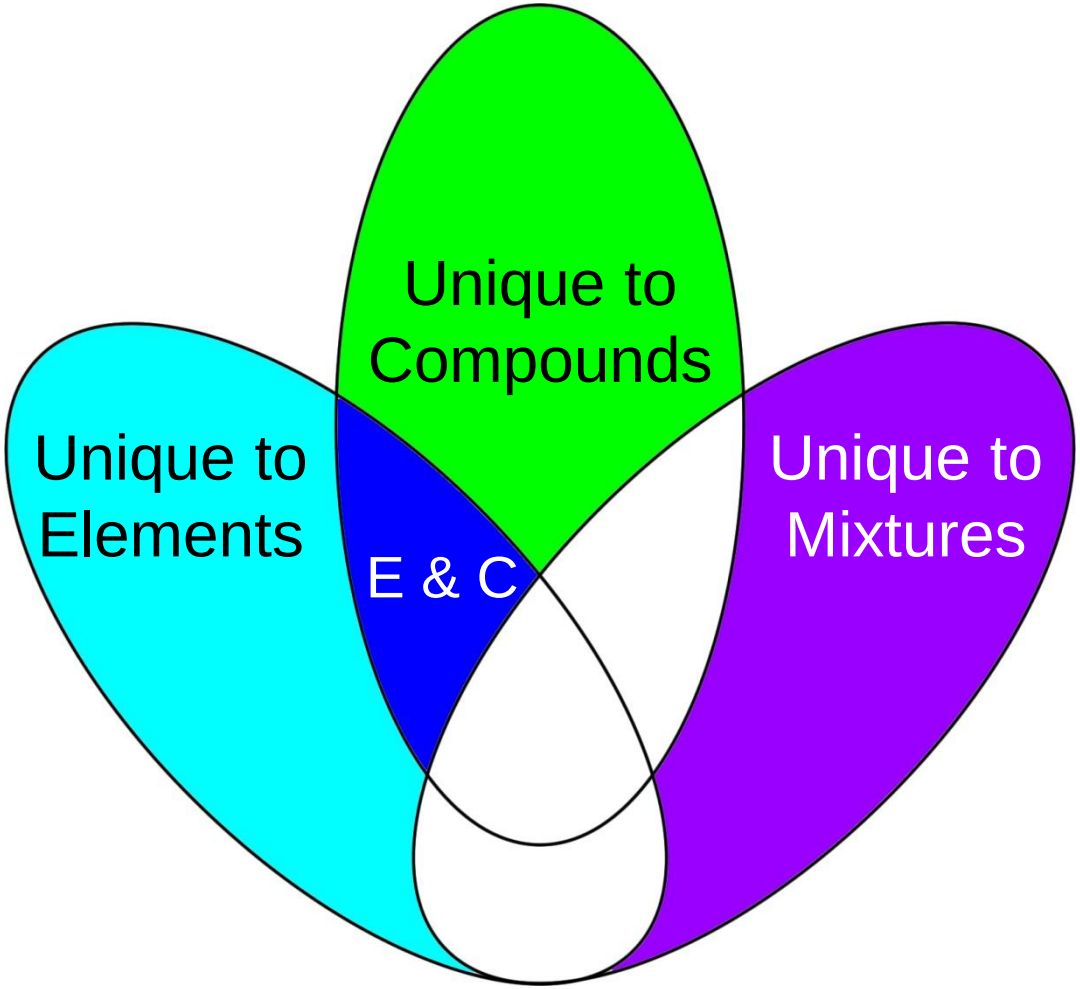

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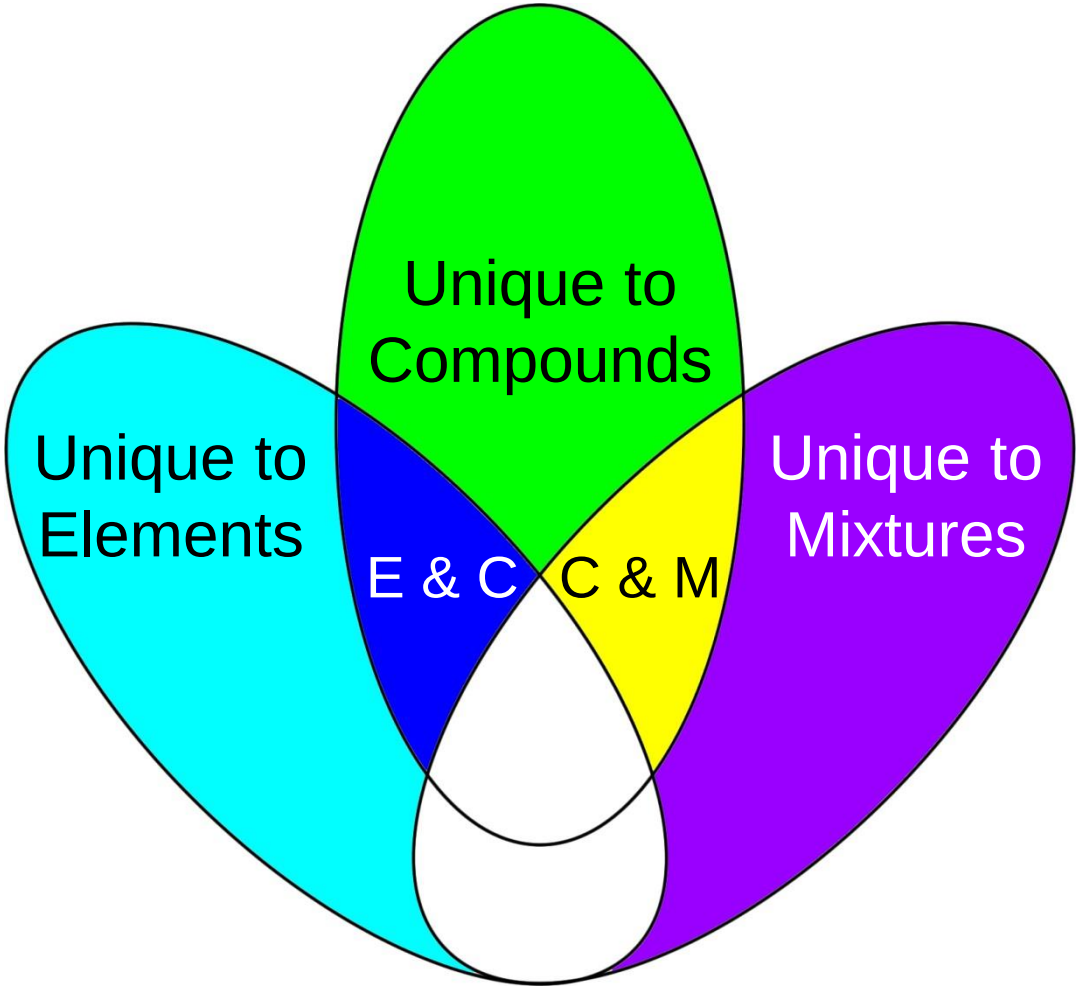

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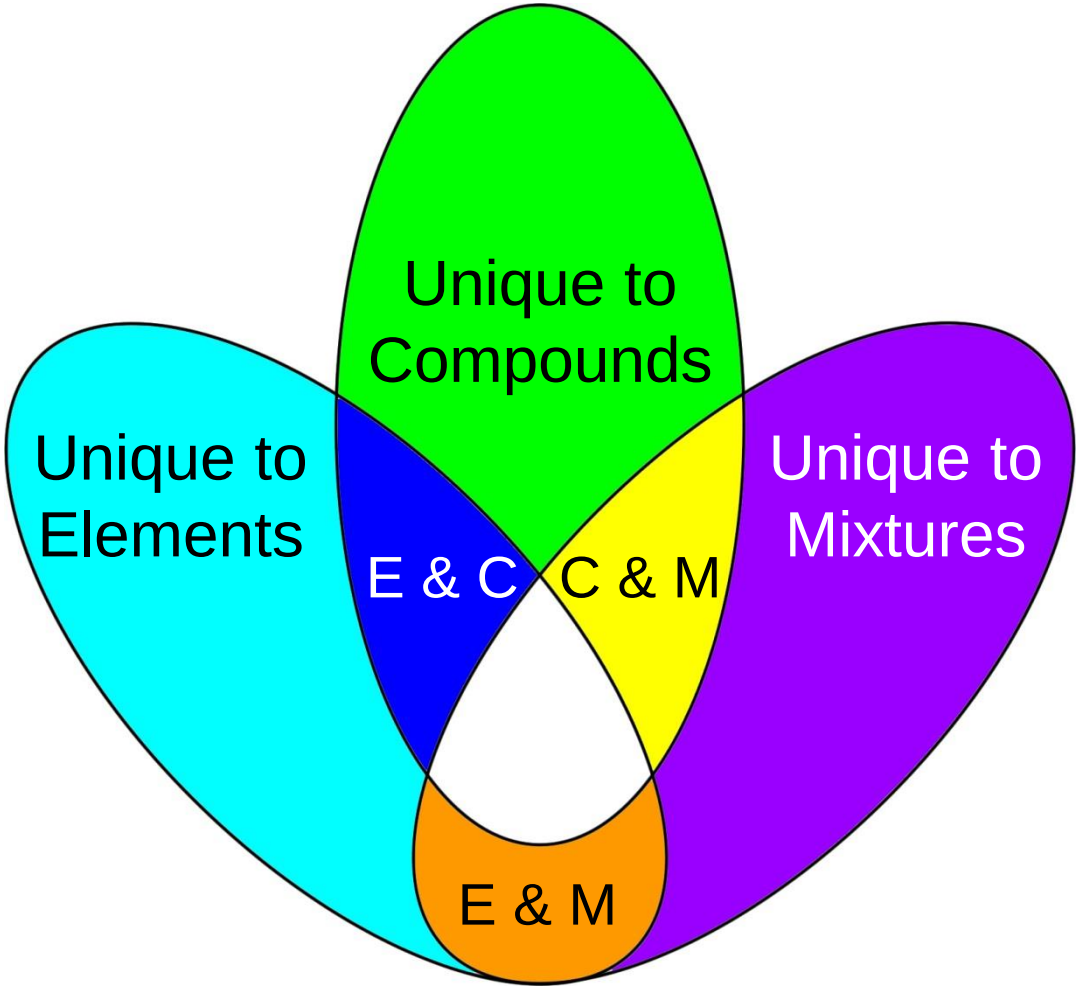

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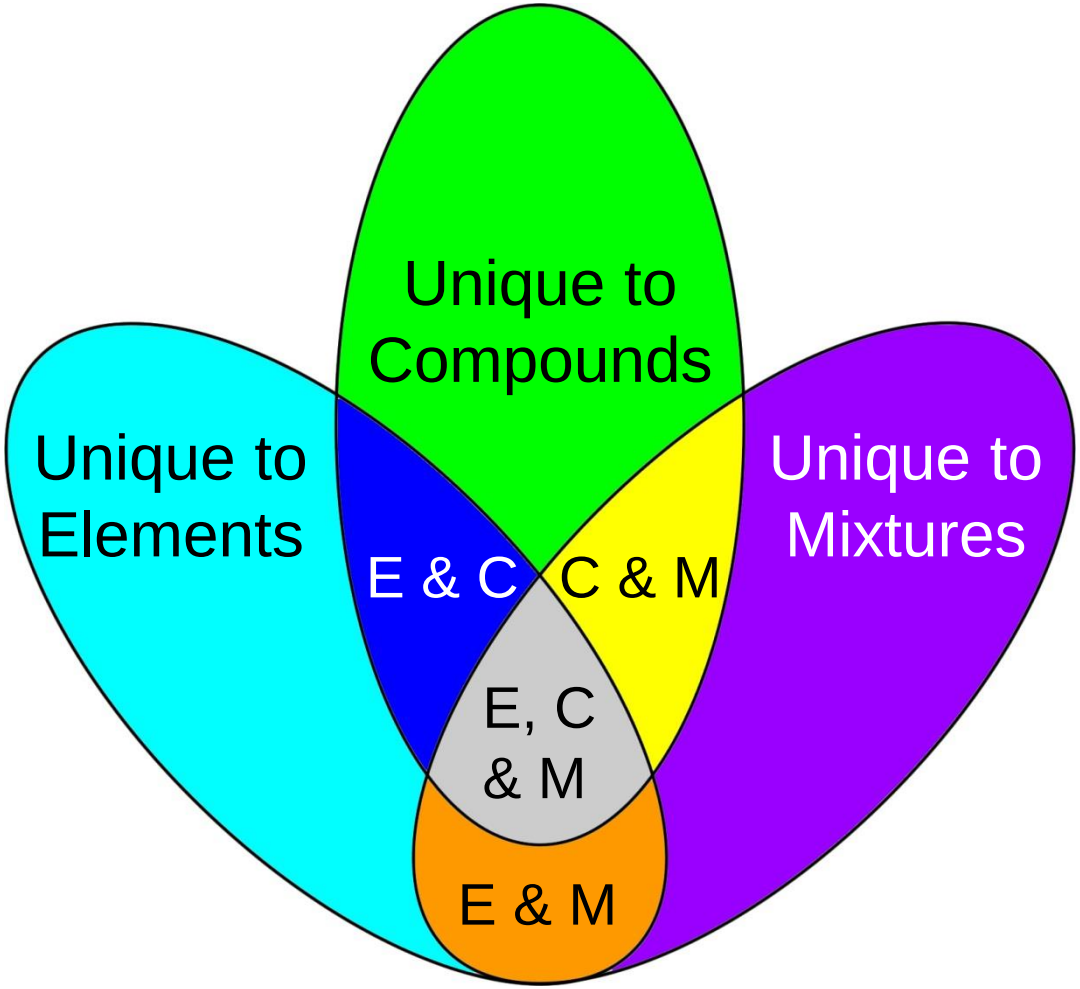

The Differentiated Classroom

◆ Differentiating Instruction with Menus

- Questions are arranged in a grid.
- Questions increase in complexity (Blooms' Taxonomy) from left to right.
- Another variable, such subject content or students' styles of learning (Multiple Intelligences) changes from top to bottom.
- Students answer questions that are aligned to their abilities, learning styles and interests.

The Differentiated Classroom

- Differentiating Instruction with Menus

Bloom's Taxonomy (Revised)	Gardener's Multiple Intelligences	June Maker's Matrix
Remember	Verbal Linguistic	Abstraction
Understand	Logical Mathematical	Complexity
Apply	Visual Spatial	Variety
Analyse	Bodily Kinaesthetic	Organisation
Evaluate	Musical	Study of People
Create	Interpersonal	
	Intrapersonal	
	Naturalist	
	Existential	

The Differentiated Classroom

- Differentiating Instruction with Menus

Question One	Question Two	Question Three
Question Four	Question Five	Question Six
Question Seven	Question Eight	Question Nine

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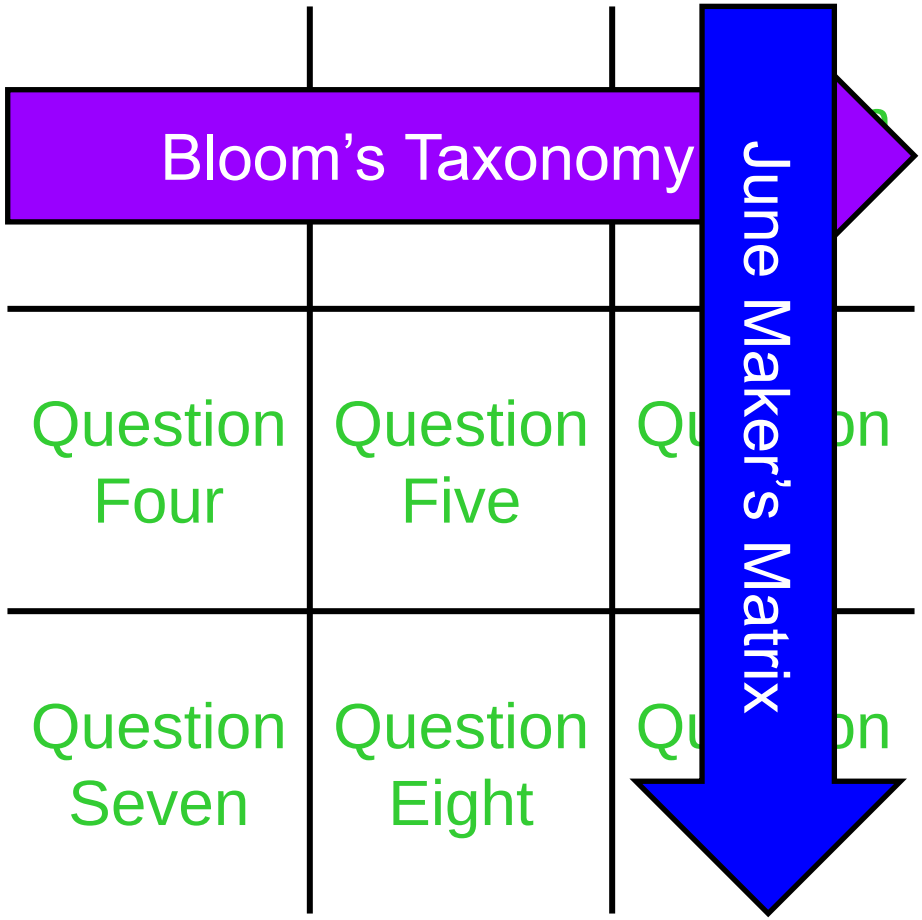
- Differentiating Instruction with Menus



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- Differentiating Instruction with Menus

Question One	Question Two	Question Three
Question Four	Question Five	Question Six
Question Seven	Question Eight	Question Nine

The Differentiated Classroom

- Differentiating Instruction with Menus

Question One	✓	Question Three
Question Four	Question Five	Question Six
Question Seven	Question Eight	Question Nine

The Differentiated Classroom

- Differentiating Instruction with Menus

Question One	✓	Question Three
✓	Question Five	Question Six
Question Seven	Question Eight	Question Nine

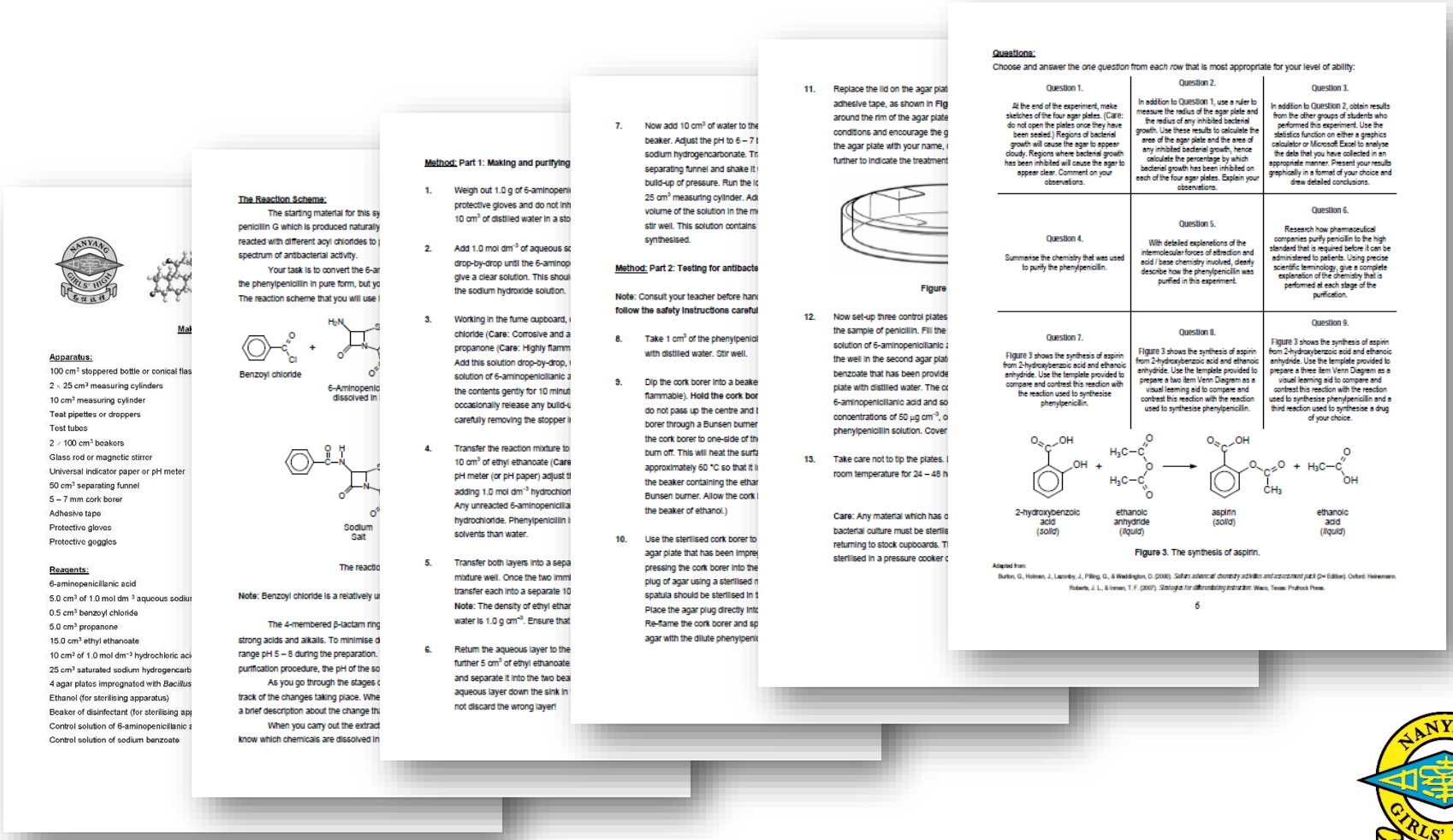
The Differentiated Classroom

- Differentiating Instruction with Menus

Question One	✓	Question Three
✓	Question Five	Question Six
Question Seven	Question Eight	✓

The Differentiated Classroom

- Differentiating Instruction with Menus



The Differentiated Classroom

What about differentiated instruction and *UbD*?

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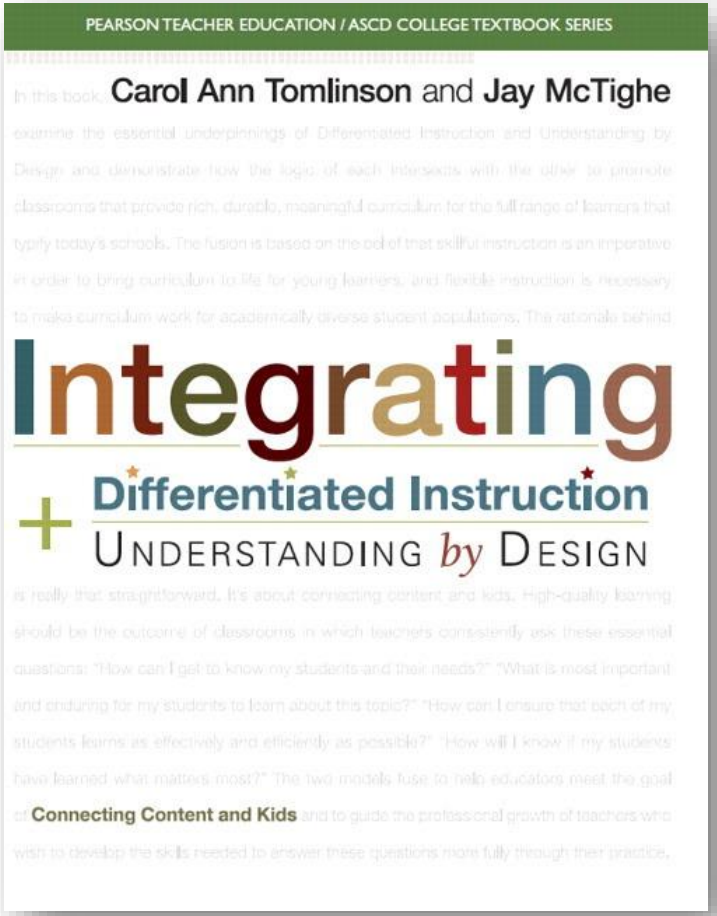


The Differentiated Classroom

- Integrating Differentiated Instruction and Understanding by Design

In effective classrooms, teachers consistently attend to at least four elements: *whom* they teach (students), *where* they teach (learning environment), *what* they teach (content), and *how* they teach (instruction). If teachers lose sight of any one of the elements and cease investing effort in it, the whole fabric of their work is damaged and the quality of learning is impaired.

The Differentiated Classroom

- Integrating Differentiated Instruction and Understanding by Design

Understanding by Design focuses on *what* we teach and *what* assessment evidence we need to collect. Its *primary* goal is delineating and guiding application of sound principles of curriculum design. It also emphasises *how* we teach, particularly ways of teaching for student understanding. Certainly the model addresses the need to teach so that students succeed, but the model speaks most fully about *what* and *how*. In other words, *Understanding by Design* is predominantly (although not solely) a curriculum design model.

The Differentiated Classroom

- Integrating Differentiated Instruction and Understanding by Design

Differentiated Instruction focuses on *whom* we teach, *where* we teach, and *how* we teach. Its *primary* goal is ensuring that teachers focus on processes and procedures that ensure effective learning for varied individuals. Defensible models of differentiation will *necessarily* address the imperative of differentiating quality curriculum. Nonetheless, differentiation is predominantly (although not solely) an instructional design model.

The Differentiated Classroom

- Integrating Differentiated Instruction and Understanding by Design

Stage 1:

Desired results for learners could include outcomes such as the following:

- Deeper understanding of "big ideas" within content standards by *all students*.
- Greater interest and engagement in school among *each student population*.
- Higher-quality student work for *each student* on tasks that are meaningful for *each student*.
- Improved achievement for *each population* of students.

The Differentiated Classroom

- Integrating Differentiated Instruction and Understanding by Design

Stage 2:

With specific results in mind (both student outcomes and professional actions), we now shift to "thinking like an assessor." Ask yourself: How will we know when we have successfully connected elements of *Understanding by Design* and *Differentiated Instruction*? Where should we look and what should we look for as evidence of progress towards our goals? What "data" will provide credible evidence of targeted improvements?

The Differentiated Classroom

- Integrating Differentiated Instruction and Understanding by Design

Stage 2:

How will we assess our current status? What benchmarks will we examine along the way? What observable indicators will show that the *Understanding by Design* and *Differentiated Instruction* connection is working? Having a clear assessment plan helps us clarify goals, focus actions, and inform needed adjustments to plans.

The Differentiated Classroom

- Integrating Differentiated Instruction and Understanding by Design

Stage 3:

As an individual teacher, make a specific plan for implementing the ideas and pay attention to their effects. For example, are your students more engaged? Motivated? Producing higher quality work? Learning more? Showing deeper understanding? Which students are moving consistently toward your desired goals? Which ones are not? "Think big, start small" – Like a rubber band that is stretched, there is a natural tendency to want to return to your comfort level, especially when a novel approach does not go as smoothly as you would like.

The Differentiated Classroom

◆ Integrating Differentiated Instruction and Understanding by Design

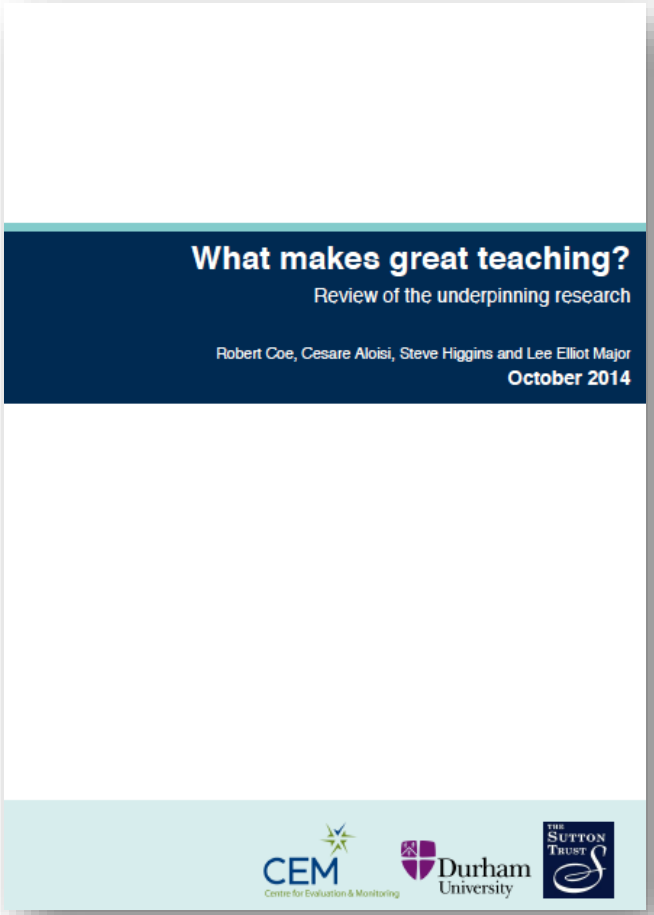
- Both *Understanding by Design* and *Differentiated Instruction* use *big ideas* / *enduring understandings* / *macroconcepts* to organise and structure units / topics and to focus the students' learning.

- Both *Understanding by Design* and *Differentiated Instruction* use *authentic transfer tasks* / *performance tasks* as a way of assessing students' knowledge and understanding.

Great Teaching

What makes *great* teaching?

Great Teaching



- Professor Robert Coe *et al.* (University of Durham) analysed 200 pieces of research to identify the elements of teaching with the strongest evidence of improving attainment.

Great Teaching

❖ Key Findings

The two factors with the *strongest evidence* of improving pupil attainment are:

- *Teachers' content knowledge*, including their ability to understand how students think about a subject and identify common misconceptions.

- *Quality of instruction*, which includes using strategies like effective questioning and the use of assessment.

Great Teaching

❖ Key Findings

Specific practices which have *good evidence* of improving attainment include:

- Challenging students to identify the reason why an activity is taking place in the lesson.
- Asking a large number of questions and checking the response of all students.

Great Teaching

❖ Key Findings

Specific practices which have *good evidence* of improving attainment include:

- Spacing-out study or practice on a given topic, with gaps in between for forgetting.

- Making students take tests or generate answers, even before they have been taught the material.

Great Teaching

❖ Key Findings

Common practices which are *not* supported by evidence include:

- Using praise lavishly.
- Allowing learners to discover key ideas by themselves.

Great Teaching

❖ Key Findings

Common practices which are *not* supported by evidence include:

- Grouping students by ability.
- Presenting information to students based upon their preferred learning style.

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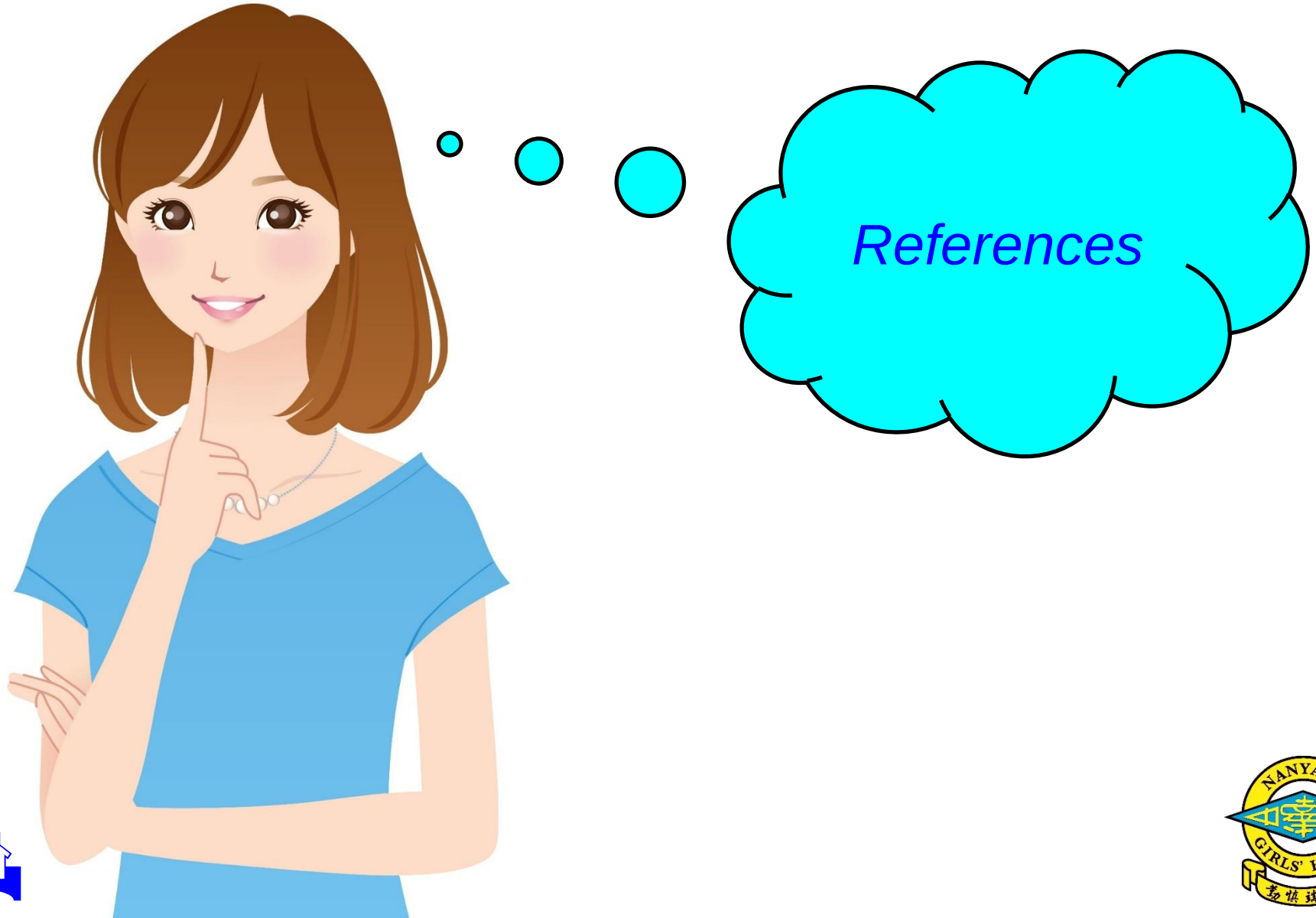

The Differentiated Classroom

- Anstee, P. (2011). *Differentiation pocketbook*. Alresford, Hampshire: Teachers' Pocketbooks.

- Cowley, S. (2013). *The seven T's of practical differentiation*. Bristol: Sue Cowley Books Ltd.

- Tomlinson, C. A. (1999). *The differentiated classroom: responding to the needs of all learners*. Alexandria, VA: Association for Supervision and Curriculum Development.

- Tomlinson, C. A., & McTighe, J. (2006). *Integrating differentiated instruction and understanding by design*. Alexandria, VA: Association for Supervision and Curriculum Development.

- Westphal, L. E. (2007). *Differentiating instruction with menus: Science*. Waco, TX: Prufrock Press Inc.

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What *questions* do you have?

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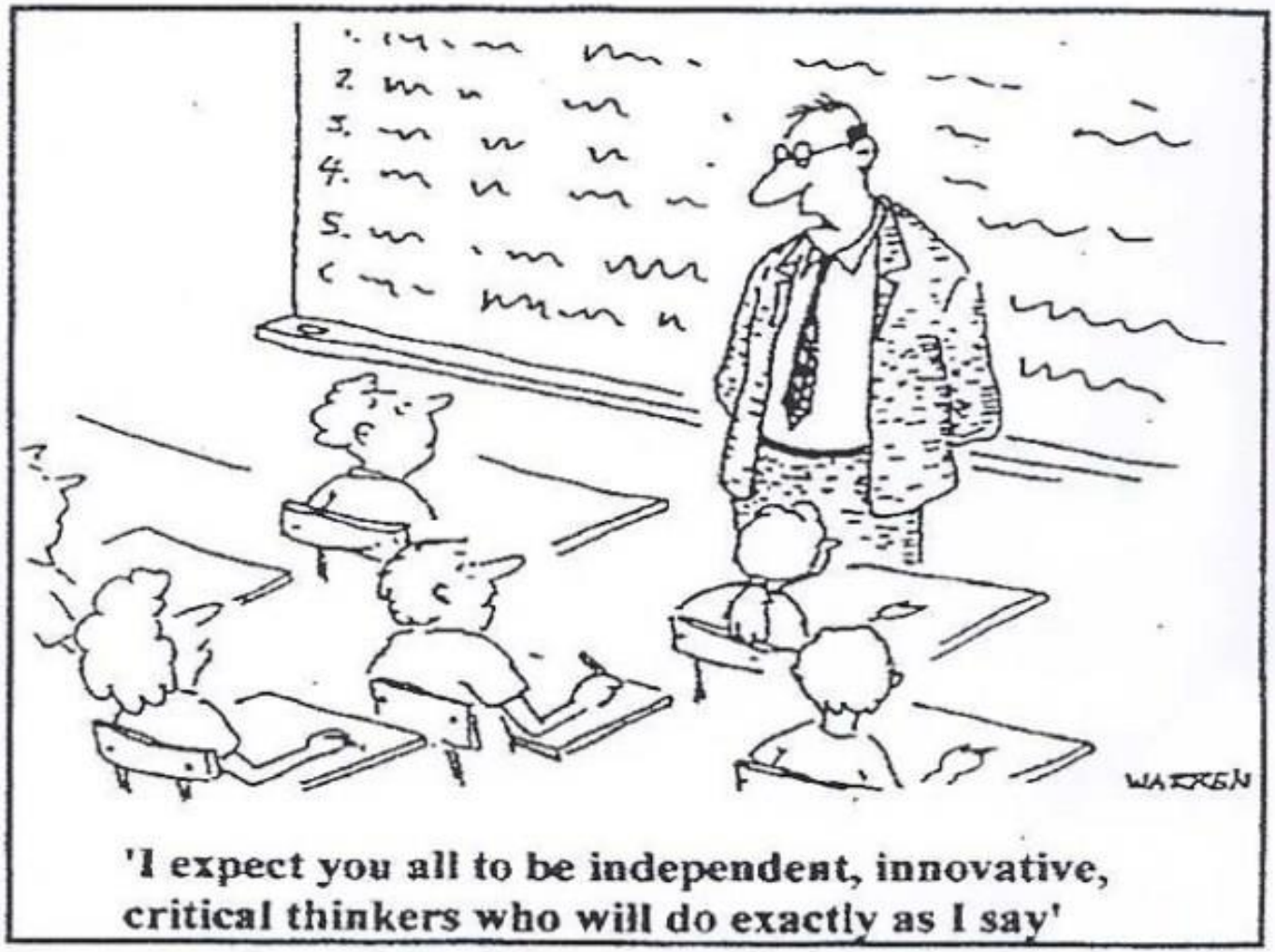

The Differentiated Classroom

Presentation on
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