

## Climate Change Education - From Teaching to Learning....

Effective teaching strategies to guide learners to become responsible, active, informed citizens who will take action throughout their lives to make their communities, country and planet more sustainable.

Education is essential if citizens of the world are to respond effectively to the effects of climate change. By understanding the impact and future consequences of climate change, young learners can develop attitudes and qualities that lead them to adapt and respond personally and within their communities to climate change issues. To authentically address the issues relating to climate change requires some innovative approaches to curriculum and pedagogy.



**Climate Change** – taking action for tomorrow starts with education today.

*...“I believe that the study of climate change is relevant to a great many of the subjects our children undertake, and that by increasing their understanding of the issue they will see the relevance of such disciplines anew. Indeed, as their understanding of the issue develops I believe that they will start seeing the world in a new way, a way that most of us have not possessed. That may seem like a large claim, but as we move to address climate change, so many aspects of our world will alter that it will be little short of a revolution.”*

Source: Adapted from Flannery, T. (2007) Foreword, **Thinking about Climate Change: A Guide for Teachers and Learners**<http://www.theweathermakers.org/pdf/tacc.pdf>

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Not for publication

## Introduction:

Learners spend up 18 years of their lives at school yet, traditionally they leave with parcels of knowledge-based information that no longer sufficiently prepare them to become responsible, well informed, active citizens who can lead change in personal, work and community contexts.

Many teachers use the 2013 curriculum as a framework for knowledge only, but effective teaching for understanding that will guide learners to think about the world around them requires examining the curriculum in more depth. Learners need to be able to about what they know, thereby guiding them to move beyond knowing facts to higher levels of application and analysis. From this application and analysis, action will grow.

## The Learner at the Centre of the Process:

For too long we have focused on the process of teaching. Teachers decide what learners must know, how they will best know this and then measure the knowledge with (usually) a test before moving on to the next section of knowledge. This is not sufficient for an era where much of that knowledge can be accessed readily with technology. To encourage learners who are, and will continue to be, **Responsible, Active, Informed** citizens, teachers must guide them to move beyond just knowledge and support them to think with what they know.

Teachers need to **turn teaching into learning** by creating learning engagements that cover the curriculum **and** move beyond the facts to build on the 4 C's of 21<sup>st</sup> Century learning<sup>1</sup>:

Communication  
Collaboration  
Creativity and Innovation  
Critical Thinking and Problem Solving

Kurikulum 2103 explicitly describes the type of learners that will hopefully be developed through engagement with the revised curriculum. At the forefront of the curriculum rationale is a recognition that education is more than covering content. The purpose is to develop thinking citizens who have the skills and attitudes to respond to challenges of the future.

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<sup>1</sup> P21 Partnership for 21<sup>st</sup> Century Learning [www.P21.org](http://www.P21.org)

## **Communication**

### *Communicate Clearly*

- Articulate thoughts and ideas effectively using oral, written and nonverbal communication skills in a variety of forms and contexts
- Listen effectively to decipher meaning, including knowledge, values, attitudes and intentions
- Use communication for a range of purposes (e.g. to inform, instruct, motivate and persuade)
- Utilize multiple media and technologies, and know how to judge their effectiveness a priori as well as assess their impact
- Communicate effectively in diverse environments (including multi-lingual)

## **Collaboration:**

### *Collaborate with Others*

- Demonstrate ability to work effectively and respectfully with diverse teams
- Exercise flexibility and willingness to be helpful in making necessary compromises to accomplish a common goal
- Assume shared responsibility for collaborative work, and value the individual contributions made by each team member

## **Critical Thinking and Problem Solving:**

### *Reason Effectively*

- Use various types of reasoning (inductive, deductive, etc.) as appropriate to the situation

### *Use Systems Thinking*

- Analyze how parts of a whole interact with each other to produce overall outcomes in complex systems

### *Make Judgments and Decisions*

- Effectively analyze and evaluate evidence, arguments, claims and beliefs
- Analyze and evaluate major alternative points of view
- Synthesize and make connections between information and arguments
- Interpret information and draw conclusions based on the best analysis
- Reflect critically on learning experiences and processes

### *Solve Problems*

- Solve different kinds of non-familiar problems in both conventional and innovative ways
- Identify and ask significant questions that clarify various points of view and lead to better solutions

## **Creativity and Innovation**

### *Think Creatively*

- Use a wide range of idea creation techniques (such as brainstorming)
- Create new and worthwhile ideas (both incremental and radical concepts)
- Elaborate, refine, analyze and evaluate their own ideas in order to improve and maximize creative efforts

### *Work Creatively with Others*

- Develop, implement and communicate new ideas to others effectively
- Be open and responsive to new and diverse perspectives; incorporate group input and feedback into the work
- Demonstrate originality and inventiveness in work and understand the real world limits to adopting new ideas
- View failure as an opportunity to learn; understand that creativity and innovation is a long-term, cyclical process of small successes and frequent mistakes

### *Implement Innovations*

- Act on creative ideas to make a tangible and useful contribution to the field in which the innovation will occur

*“Pendidikan nasional, sebagai salah satu sektor pembangunan nasional dalam upaya mencerdaskan kehidupan bangsa, mempunyai visi terwujudnya sistem pendidikan sebagai pranata sosial yang kuat dan berwibawa untuk memberdayakan semua warga negara Indonesia berkembang menjadi manusia yang berkualitas sehingga mampu dan proaktif menjawab tantangan zaman yang selalu berubah. Makna manusia yang berkualitas, menurut Undang-Undang Nomor 20 Tahun 2003 tentang Sistem Pendidikan Nasional, yaitu manusia terdidik yang beriman dan bertakwa kepada Tuhan Yang Maha Esa, berakhlak mulia, sehat, berilmu, cakap, kreatif, mandiri, dan menjadi warga negara yang demokratis dan bertanggung jawab. Oleh karena itu, pendidikan nasional harus berfungsi secara optimal sebagai wahana utama dalam pembangunan bangsa dan karakter.”<sup>2</sup>*

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<sup>2</sup> Dokumen Kurikulum 2013

## **Establishing a learning environment in the classroom**

In an effective classroom, most of the following indicators are consistently observed:

### Subject knowledge

- The teacher clearly has command of the subject material required for secondary school
- The teacher understands the curriculum requirements of the subject
- The teacher has an understanding of the subject material far beyond that required for secondary school
- The teacher connects the subject material to the day-to-day lives of learners
- The teacher demonstrates a concern for issues related to climate change

### Classroom management

- Standards of conduct are clear and consistent for all learners
- There is a supportive, inclusive learning environment for all learners
- The teacher and learners are ready to begin and end the class on time
- Learners are engaged in the lesson and behave appropriately
- Learners respond favourably to teacher input
- Learners are encouraged to share perspectives and personal opinions.

### Relationships with learners

- The teacher knows the names and personal characteristics of all learners
- The teacher and learners demonstrate respect for all in the classroom
- The teacher asks appropriate questions to individual learners
- Learners are encouraged to ask questions in class
- The teacher acts in a professional, but caring, manner at all times

### Understanding of how learners learn

- A range of activities leads all learners towards achieving the aims of the lesson/unit
- Learners have the opportunity to collaborate to answer meaningful, open questions
- A range of modes is used in designing activities (eg: visual, auditory, kinaesthetic, problem-based learning, etc)
- Activities are designed with a range of challenge to cater for the interest and abilities of all learners

### Planning engaging, interactive, relevant lessons so that all learners can learn

- Lesson/unit plans have clear, achievable, but challenging aims
- A range of activities leads all learners towards achieving the aims of the lesson/unit
- While some questions elicit factual information, most should encourage high-level thinking from learners
- Activities are designed to cater for a range of student understanding – this might result in some one-on-one teaching (if possible) and strategic groupings of learners

- Learners have the opportunity to collaborate to answer meaningful questions
- Learners have the opportunity to discuss and present their learning
- Lesson plans are part of a coherent sequence of learning
- Where appropriate, real-life examples are used
- If possible, teachers plan together so that one idea can be explored at the same time in more than one subject.

#### Use of assessment to improve teaching and learning

- The teacher designs reliable, valid strategies to find out what learners know and can do
- Student learning is continuously assessed as part of normal classroom practice
- The teacher builds on what learners already know and can do
- The teacher gives constructive, timely feedback to learners
- The teacher uses assessment to improve learning

#### Model the dispositions of a responsible, active, thinking citizen

- Actively demonstrate and share mitigation strategies eg, turning lights off when not needed, picking rubbish etc
- Share action that has been taken in the teacher's community
- Model a personal learning through sharing information and/or articles, blogs, websites related to climate change.
- Suggest events special days, events that teachers/students can collaboratively work on.
- Develop scenarios relevant for the local community to guide future thinking skills in students.
- Take action in the local community as an informed leader.

### **Interdisciplinary Planning and Teaching**

For climate change to be fully integrated into the curriculum, a whole school approach is required. Whilst scientific knowledge underpins some aspects of climate change, the societal aspects may be explored through civics and the social sciences, future predictions through economics, information gathering and sharing through languages, data analysis and predictions through mathematics.

For teachers interdisciplinary planning and teaching provides a framework for sharing ideas and resources by exploring a concept or question in different subjects. By exploring common ideas in different classes, learner's understanding is deeper. Additionally, students see teachers as models of collaboration.

For learners, interdisciplinary planning gives them an opportunity to engage with new learning through connections gathered from other subjects. It provides more ways for learners to gain knowledge thereby strengthening

their understanding. The learning is more 'real world' as natural connections that also exist in the world are demonstrated.

Climate change issues that could be considered across subjects may be drawn from:

*Worldwatch Institute identified ten key strategies for mitigating and adapting to climate change. The first of these was lifestyle changes by individuals but the other nine emphasised roles for all sectors of society. The ten strategies are:*

### **Changing Lifestyles**

*The assumption that the "good life" requires ever more individual consumption, more meat-eating, ever larger homes and vehicles, and disposable everything will need to fade. A spirit of shared and equitable material sacrifice can replace it – with no loss of the things that really matters, such as active good health, strong communities, and time with family*

### **Thinking Long Term**

*At the core of the climate problem is the likelihood that future generations will pay with a deteriorating global environment for the refusal of current generations to live in balance with the atmosphere. Visionary leaders will need to marshal the public to take responsibility for the impacts of today's behavior on the future and to act accordingly. Sustainability means learning **how to think in terms of forever.***

### **Innovation**

*The emissions shift will require technologies that break the carbon link to energy consumption with as little sacrifice of price and convenience as possible. A range of renewable technologies can produce electricity and meet heating and cooling needs. Such technologies include buildings that produce more energy than they consume and "smart grids" that use information technology to match renewably produced electricity precisely to demand.*

### **Population**

*Rarely addressed in the context of climate change, future population trends could make the difference between success and failure in the long-term balance of human activities, atmosphere, and climate. The world's population is likely to stop growing and then gradually decline for a period when women gain the full capacity to decide for themselves whether and when to have children.*

### **Healing Land**

*Managed for the task, the Earth's soil and vegetation can remove billions of tons of carbon from the atmosphere. Agricultural landscapes can accomplish this while improving food and fiber production and minimizing the need for artificial fertilizer and fossil-fuel-driven tilling and raising farmer incomes.*



### **Strong Institutions**

*The global nature of climate change demands international cooperation and sound governance. The strength and effectiveness of the United Nations, multilateral banks, and major national governments are essential to addressing global climate change. These institutions require strong public support for their critical work.*

### **The Equity Imperative**

*No climate agreement will succeed without support from those countries that have so far contributed little to human-induced climate change, have low per-capita emissions, and stand to face the biggest challenges in adapting to the coming changes. Agreements and strategies that are fair to developing and industrialized countries alike are essential.*

### **Economic Stability**

*Addressing climate change will demand attention to costs and the promise of improving rather than undermining long-term economic prospects. A climate agreement will have to operate effectively during anemic as well as booming economic periods, facing squarely the challenges of poverty and unemployment while continually reducing emissions of carbon dioxide and other greenhouse gases.*

### **Political Stability**

*A world beset by conflict and terrorism is far less likely to prevent dangerous climate disruption than one at peace. Security and climate must be addressed simultaneously. Negotiating an effective and fair climate agreement offers countries a needed opportunity to practice peace and re-frame international relations along cooperative rather than competitive lines.*

### **Mobilizing for Change**

*The way to deal with climate change we are causing is to see the opportunity for a new global economy and new ways of living in the effort to bring net greenhouse gas emissions to an end. There is no guarantee such a transition will be easy – or even possible. However, local and global movements to make the effort are needed now, and could yield new jobs, new opportunities for peace, and global cooperation beyond what humanity has ever achieved.*

Source: Worldwatch Institute (2009) **State of the World 2009: Into a Warming World.**

By addressing some of these issues across subjects with learners, schools and teachers can be the agents who create learners who are:

**Responsible, Active, Informed.**

## **Pedagogy:**

To adopt the 4 C's of 21<sup>st</sup> Century learning requires teachers to reconsider the pedagogies of the past. Classrooms that promote **creativity, communication collaboration and critical thinking and problem solving** require the teacher to become a facilitator, refocusing from the teacher 'telling' to 'asking' and the learners from 'remembering' to 'thinking and doing'.

Teachers can help learners build **creativity and critical thinking** by the types of questions they ask them to respond to. Information can be accessed from many places (textbooks, internet, observations, field trips). Teachers need to connect learners to the information by prompting their thinking so that learners are not thinking **of** things, but thinking **about** them. Prompting thinking and provoking wonder and enabling new, original opinions to develop.

Learners can build **communication skills** that reflect the world they are surrounded by. Rather than writing an essay or a report about a topic they are learning, they can share their solutions and ideas using formats they see in the world around them eg. posters, digital formats, comics, journals, blogs, news reports or interactive games - communication using tools that engage learners different intelligences and interests and naturally encourage them to create products that reflect their individuality and their unique ideas.

While we often think about **collaboration** as only group work or sharing ideas. While these may be starting points, when teachers can establish a genuine collaborative classroom where learners communicate individual knowledge, skills, ideas and perspectives to reach new shared understandings, engagement and interest levels will be higher and learning beyond facts and knowledge enhanced.

## Tools to Support the 4 C's

### Introduction to a lesson:

#### Classroom setup:

The classroom should be set up to support communication and collaboration and to stimulate thinking. Often the resources in the room tables chairs notice boards etc cannot be changed but thinking beyond the 4 walls and moving outside for short sharing sessions, moving tables and chairs into groups, allowing students to sit on the floor or stand to talk can invite collaboration and promote thinking. Some practices to consider when establishing a classroom that support the 4 Cs are:

- ~ Desks arranged in groups – if possible, if not allow student to work outside the room in groups and return with responses to questions.
- ~ Chairs that can be moved around – where possible. If not possible take the class outside for short group talks and return to the room for sharing.
- ~ Access to corridors or space outside the room for group work
- ~ Areas for sharing work – on walls, outside the room.
- ~ Only learner work displayed and shared in the classroom- no commercial or teacher made posters.
- ~ One space only for notices, information etc and keep this relevant and up to date.
- ~ Remove old work, old notices so that the classroom reflects the current learning.
- ~ Collaborate with other teachers who use the classroom – share the areas and have a common space for work on the current climate change topic.
- ~ Ask the learners how they would like the classroom to be set up.
- ~ Display work that shows thinking processes – eg mind maps, student questions – not just finished work.

*(Communication, Collaboration, Creativity and Innovation)*

#### Classroom Agreements:

Collaborate with students to set up agreements about how they believe everyone should behave and treat each other in the classroom. Some aspects of climate change could be included such as waste of resources (electricity, paper etc), rubbish disposal. Student could be guided to consider things like respecting the views of others, listening to all, gender equity. Once the agreements have been gathered group them under headings, summarise the key points, ask all students if they can accept and agree to them and display them for reference in all lessons.

*(Critical Thinking & Problem Solving, Communication, Collaboration, Creativity & Innovation)*

### Connection to prior learning:

At the end of the previous lesson assign one group to prepare a 2-4 minute summary of the understandings from the lesson to share in any way (poster cartoon, mind map, video, interview, chart, role play) at the start the new lesson.

*(Communication, Collaboration Creativity and Innovation)*

### *Recap*

In groups students discuss the prior lesson and come up with 5 key points. (5 minutes) and share these orally with the class.

*(Communication, Collaboration)*

### *KWL Chart*

Develop a chart with headings **Know, Want to Know and Learned**

Introduce a topic and have students write what they know and what they want to know more about. As the topic progresses that can add new ideas they now understand.

*(Communication, Collaboration)*

### Start by making students curious:

Ask a question that makes them think of possibilities and connects...

*How hot is too hot? (from different perspectives)*

*What is a need?*

*Who has rights and what responsibilities come with these?*

*Who has power?*

*What do we need to survive?*

*What is fair?*

Bring pictures, video clips that present them with provocations?

Share a short clip or cartoon from a newspaper, magazine or journal to provoke thinking. – Have student work on solutions.

Give an answer and have students develop questions

Guest speaker – does not have to be an expert – just someone who can tell their story.

*(Critical Thinking & Problem Solving, Communication, Collaboration, Creativity & Innovation)*

## **During the Lesson:**

### Good Questions:

Well-designed teacher questions will make learners think and continue to think long after the lesson is finished. Good teacher questions that promote thinking;

- Cannot be answered with a 'yes' or 'no'.
- Cannot be answered with just a fact.
- May have several different answers.
- Invite further questions.
- May not have an answer at all....just further wonderings.
- Make learners curious.

Some question starters to provoke thinking past facts.

Should....?

Could....?

What if....?

Can.....?

Did.....?

Might.....?

If.....?

Does...?

What are the reasons...?

How would it be different if...?

Suppose that...?

What if we knew...?

What would change ...?

*(Critical Thinking and Problem Solving, Communication, Creativity and Innovation)*

Tips for asking questions to a class:

Ask questions at the start and during the lesson, before giving any instructions.

Display a 'question of the lesson' and keep coming back to this.

Get learners to respond to a teacher question with another question not an answer.

Have learners develop answers in groups.

Have different ways of sharing answers other than speaking.

'No hands up'...ask different learners for responses.

Give plenty of time for learners to think about their responses.

Give learners an answer and get them to write the questions. Eg The answer is sunlight...what is the question?

Exit cards – each learner writes an additional question at the end of the lesson and hands it to the teacher.

Wonderwall a section of the room where learners post questions they have – these may be answered by the teacher or other learners.

*(Critical Thinking and Problem Solving, Communication, Creativity and Innovation)*

### Responding to Student answers:

When teachers reply with words such as 'good answer', 'well done', 'nice work' 'that's correct' thinking stops. Learners immediately receive the message that they don't have to think about that question any more.

Instead responses that make learners keep thinking may include:

What do you mean by that?

Why do you think that way?

Do you have evidence for that?

Are you sure?

What may come next?

Can you give me more examples of?

Would everyone think like that.....what if?

*(Critical Thinking and Problem Solving, Communication, Creativity and Innovation)*

### Guiding Learners to Think

Throughout a lesson, learners have many different thoughts and wonderings in response to information, peers questions, conversation and dialogue and teacher questions. Often teachers do not provide ways catch these creative thoughts and use the ideas to construct more understandings. To effectively encourage learner thinking teachers need to:

- Trigger thinking (see above section)
- Provide time for group work and collaboration to share ideas and prompt more thinking
- Give ways for learners to share and display both individual and group thoughts.
- Allow time to reflect.

There are many examples of *Visible Thinking* tools available. Some possible strategies are;

### *Headline*

If you were to write a newspaper headline for this topic that captures the most important issue what would that headline be?

*(Critical Thinking and Problem Solving, Communication)*

### *Question starters*

1. Brainstorm a list of 10 questions about the topic, concept or object. Use these question-starts to help you think of interesting questions:

Why...? What are the reasons...? What if...?

What is the purpose of...?

How would it be different if... ? Suppose that...? What if we knew...?

What would change if...?

2. Review the brainstormed list and star the questions that seem most interesting. Then, select one or more of the starred questions to discuss for a few moments.

3. Reflect: What new ideas do you have about the topic, concept or object that you didn't have before?

*(Critical Thinking and Problem Solving, Communication)*

### *Think Pair Share*

After, reading, listening, watching, ask a question...

Think alone for 2 min

Turn to a partner and share your thoughts

Summarise ideas that are the same.

*(Critical Thinking and Problem Solving, Communication, Collaboration)*

*What makes you say that?...( to justify thinking)*

What's going on?

What makes you say that?

*(Critical Thinking and Problem Solving, Communication)*

*I see, I think, I wonder..*

After making observations...

What did you notice?

What did it make you think about?

What are you still wondering about?

*(Communication, Collaboration Creativity and Innovation)*

### *Mind Map*

Individually or in groups develop a mind map around an idea. Revisit the mind map as more understandings emerge – add new ideas in a different colour.

*(Critical Thinking and Problem Solving, Communication, Collaboration)*

### *Colour Symbol Image*

After reading, listening or viewing learners decide on a colour and symbol and an image that connects to the big ideas that they understood. They can share these in groups to explain their choices.

*(Communication, Collaboration)*

### *Sentence – Phrase – Word*

After reading information learners record a sentence that had meaning for them and helped them understand more a phrase that moved or provoked them and a word that captured their attention. Share in groups/class or display.

*(Communication)*

### *Connect, Extend, Challenge*

How are these ideas **connected** to what you know?

How has your thinking been **extended**, what new things do you know now?

What is still **challenging** you, what questions do you still have?

*(Critical Thinking and Problem Solving, Communication, Creativity and Innovation)*

### *Circle of Viewpoints*

In groups students assume the role of different people who may be affected by a circumstance. They share the impact that this will have on each from the different perspectives. The purpose is to develop empathy, appreciate others have different perspectives

*(Critical Thinking and Problem Solving, Communication)*



## *Personal journals*

– kept for a unit of work to show how feelings change  
(*Critical Thinking and Problem Solving, Communication, Collaboration  
Creativity and Innovation*)

For more examples, especially those developed by the team at Project Zero, from Havard University look at the websites below.

### Project Zero:

[http://www.visiblethinkingpz.org/VisibleThinking\\_html\\_files/03\\_ThinkingRoutines/03d\\_UnderstandingRoutines.html](http://www.visiblethinkingpz.org/VisibleThinking_html_files/03_ThinkingRoutines/03d_UnderstandingRoutines.html)

### Think from the Middle – Rochester Community Schools

<http://www.rcsthinkfromthemiddle.com/hot-spots.html>

### A Culture of Thinking

<http://acultureofthinking.weebly.com/listing-of-routines.htm>

## **Reflection Strategies - Finishing a lesson**

### **Reflection that leads to action:**

*Exit cards* – where learners write a word or phrase to describe a new understanding or thought.  
(*Communication*)

*Class discussion* – to finish a lesson.  
(*Communication, Collaboration*)

*Mural wall* – learners leave pictures or words on a wall each lesson as they leave to show how thinking changes  
(*Communication, Creativity and Innovation*)

*Rocket Writing* – learners are give 2 minutes to write down all they can in response to a question from the lesson – eg why should we care about our world?  
(*Communication*)

The following is a list of different **reflection and closing prompts:**

- Share one thing you learned.
- Share a question for future investigation.
- Summarise your learning in a word.
- What worked? What didn't work?
- What is one part of your work that you are proud of?
- How would you do this differently next time?

(*Communication*)

*I used to think.....*

*Now I think.....*

*(Critical Thinking and Problem Solving, Communication)*

*Connect, Extend, Challenge*

How are these ideas **connected** to what you know?

How has your thinking been **extended**, what new things do you know now?

What is still **challenging** you, what questions do you still have?

*(Critical Thinking and Problem Solving, Communication, Creativity and Innovation)*

*Personal journals* – kept for a unit of work to show how feelings change

*(Critical Thinking & Problem Solving, Communication, Collaboration, Creativity & Innovation)*

## **Assessment:**

*“Begin with the end in mind”* Steven Covey

Teachers must be mindful of the particular key and basic competencies that they are covering before planning assessment tasks. Techniques for assessing learners work should be varied to take into account the diverse ways in which students learn and the different types of learning activities. Learners and teachers must have a clear understanding of what is being assessed and the criteria that will be evidenced if the learners are successful.

There are two types of assessment:

**Formative Assessment** – this is directly linked to teaching and takes place before and during a lesson or unit of work. Formative assessment promotes learning as it provides regular, individual and direct feedback to students. Well planned lessons that include strategies listed in the teaching section of this guide will support teachers to include formative assessment in each lesson as many of these will provide teachers of evidence of each learners knowledge, understanding and skills development.

**Summative Assessment** - takes place at the end of a section of work and enables the teachers to see what has been learned over time. It can assess knowledge, understanding and skills in one piece of work and could prompt students to take ongoing climate change action.

Effective Assessment allows learners to:

- ~ Share their learning and understanding with others
- ~ Demonstrate a range of knowledge, understandings and skills
- ~ Use a variety of multiple intelligences and strategies to show their understanding
- ~ Know and understand before the assessment the criteria for presenting a quality product.
- ~ Participate in reflection, peer and self assessment

- ~ If possible base their experiences on real life experiences so that this may lead to action.

### **Sample Assessment Strategies:**

*WALT and WILF* – a strategy for sharing learning intentions and outcomes with learners before a lesson.

*We Are Learning To....(WALT)*. A way to share the reasons and intentions for a lesson with students at the start of the lesson.

*What I am Looking For.....(WILF)* Tells the learners what knowledge, understanding and skills they will be looking to have assessed at the end of the learning.

*Quizzes and short tests* to 'check in' on how learners are progressing – these should be quick and not require study or preparation.

*Open-Ended Tasks* - learners are presented with a stimulus (eg short reading, picture, video) and asked to present a brief written answer, drawing, role play, diagram or solution.

*Self Assessment* – students rate their understanding against a check list or rubric.

*T- Chart – I do understand and I don't understand*

*Reflection Prompts* such as  
"If I could do this again I would...."  
"I am pleased with this work because...."  
"This challenged me because...."

### **Some Assessment Tools**

*Rubrics*: An established set of criteria for rating students in all areas. The descriptors tell teachers what characteristics to look for in the learner's work and then how to rate that work on a predetermined scale.

*\*See sample rubric in the Appendix*

*Checklists*: A list of information, data, attitudes or other aspects that should be present in a piece of work.

*Anecdotal Records*: Brief written notes based on observation of students. They need to be revised regularly.

*Continuums*: Visual representations that show where a student is in the development stages of understanding.

## **Conclusion:**

**“Never doubt that a small group of thoughtful, committed, citizens can change the world. Indeed, it is the only thing that ever has.”**

- Margaret Mead

Only through recognising the importance of what everyone (school communities, families, local communities, governments and businesses) can do to towards mitigating climate change can sustainable action be achieved.

*Not for publication*

**Appendix: Sample Rubric: An Equitable Society?**<sup>3</sup>

Criteria	Excellent - 4	Very Good - 3	Satisfactory - 2	Below Expectation - 1
<b>Knowledge</b>	Demonstrates excellent understanding of what it means to care for others from multiple perspectives of the government and the community members	Shows understanding of what it means to care for others and analyses examples from the perspectives of the government and community members	Shows some understanding of what it means to care for others. Examples from the perspectives of the government and community members draw on limited perspectives.	Does not provide evidence of an understanding of what it means to care for others from the perspectives of the government and community members
<b>Critical Thinking</b>	Analyses a range of global and national issues and suggests creative solutions that may lead to a fair and just society including initiating action to support the local community.	Analyses some global and national issues and suggests a few possible solutions to develop a fair and just society and begins to work within the local community to raise awareness.	Accesses information on national and global issues but does not effectively make connections between the information and the development of a fair and just society. Shows limited initiative to work within the local community.	Limited use of information on national and global issues. Does not make connections between information and the development of a fair and just society. Does not transfer understandings to support in the local community.
<b>Communication</b>	Uses a range of tools including writing, speaking and diagrams to share understandings and solutions with others. Varies communication methods as needed to meet the experiences and needs of others including peers teachers and community members.	Shows some different use of communication tools to share understandings and solutions with others. Varies communication methods when prompted by teachers to meet the experiences and needs of others including peers teachers and community members.	Limited use of a range of communication tools to share understandings and solutions with others.  Uses one dominant/preferred method to communicate with others including peers teachers and community members.	Understandings are not clearly communicated to an audience. There is limited evidence of consideration of solutions to problems.  Is not mindful of varying the method of communication to meet the needs and experiences of others.

<sup>3</sup> An integrated unit for Class 11 in the *ISMF* Curriculum Guide

*Not for publication*