

# **Borrisokane Community College Learning School Project**

**2015-2016**

## **Learning and Teaching Initiative:**

Enhancing student participation through the organisation of an effective seating plan and promotion of group work

## **Mission Statement:**

*We seek to promote a caring and committed school community  
which will facilitate the education of our students  
and where each individual is valued as a unique human being.  
“Is ar scáth a chéile a mhairimid”*



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## **Section 1: Context of the School:**

### **1.1: School Context.**

Borrisokane Community College is a co-educational school with a current enrolment of over 540 students. It is the sole second level school in its catchment area, students attend from an area which is approximately a twelve kilometre radius of the school. A significant proportion of students attend also from outside the catchment area of Borrisokane Community College. There is also a degree of diversity in the student population in terms of religious faith (i.e. Roman Catholic, Church of Ireland, Methodist, and other denominations) and in terms of cultural backgrounds (i.e. a small number of traveller students and a cohort of students whose primary education took place in Northern Ireland, England and other European countries). The school's enrolment figure has increased steadily over the past five years and projections for future first-year enrolment indicate an increase in numbers.

The school operates in a spirit of partnership with the whole school community of students, staff and parents. Students in the school come from a range of socio-economic backgrounds. The core of the mission statement is a caring approach to the education of students and with this in mind first year students are placed in mixed ability classes where groups of students from feeder primary schools are assigned to the same class. This ensures that students have close friends in the early days of transferring to their new school. Mixed ability continues through to second and third year with setting for English and Maths in both second and third year.

The following programmes are available to students – Junior Certificate, Transition Year, Leaving Certificate, Leaving Certificate Vocational Programme, and Leaving Certificate Applied Programme. Students with special

needs are well catered for by the Special Needs Department who liaise with Subject teachers. Delivery of the Special Needs Programme is through group work and team teaching with one to one tuition for a few students with specific needs. September 2011 the school opened a special centre for students with ASD and a wide range of extracurricular activities are available to students in both the sporting and cultural areas.

In September 2013 we moved into our completed new school buildings. These new school buildings include a two classroom centre for students with ASD. This complete refurbishment has seen the instalment of state of the art facilities for all subjects and all classrooms are equipped with the most up to date Information Technology for teaching and learning.

In the 1990s the school began by developing policies, a code of behaviour was developed and agreed upon as well as a bullying policy and the School plan which is reviewed on an annual basis. Subject departments were set up to deal with issues such as resources teaching and learning strategies and to develop co-operation and collegiality amongst teachers of the same subject. Subject department meetings take place currently during Croke Park hours and all subject meetings are recorded and copies of the minutes sent to the Principal.

In recent years each subject department has developed their own subject department plan to guide teachers in their teaching of the curriculum as well as to promote best practice and support new staff. Again in recent years there has been a focus on teaching and learning polices for example our Assessment and Homework polices. This year a pilot project was introduced to all 1st year teachers to improve learning and teaching through the use of setting grade expectations for each individual student in their summer tests. The grade

expectations are set using the data from their Micro T and Sigma T from primary school, CAT4 scores achieved in the first term and their Christmas exam results. It is envisaged that this project will help students to realise their full potential.

School self-evaluation has also been part of what we have been doing at Borrisokane Community College for years. All policies are reviewed regularly and all departments set targets at the beginning of each year and review them again at the end of the year. From time to time working groups are set up in areas that are highlights as a concern or that need developing further e.g Learning and Teaching committee, ICT committee, Special Needs, Literacy and Numeracy, Behaviour, School environment etc.

The school is committed to providing a high quality comprehensive education where each individual is valued as a unique human being. In this regard students are educated in a happy school atmosphere where positivity is to the fore. The school consists of a supportive community, where various stakeholders, including students, staff and parents work together to make the school effective. Productive teamwork is at the heart of the school environment- Is ar scáth a chéile a mhairimid.

The teachers involved in the Learning School Project are from a selection of different subject areas: Maths(1), Science (3) Irish and French(1). Management was also represented in the project as meetings were attended by the Deputy Principal.

## **Section 2 : Specific Project Report**

**2.1 Rationale:** Borrisokane Community College became involved in the Learning School Project to further enhance teaching and learning in the school and encourage reflective practice. The school has been involved with the Learning school project for the last three years and have completed several projects:

2010-2011: Assessment for Learning

2011-2012: Literacy and Numeracy

Integration of ICT

Inclusion of students with SEN

2012-2013: SSE through peer observation

2013-2014: To increase reading for pleasure in First year students and understanding of exam terminology for Sixth years

2014-2015 The development of a toolkit on effective Questioning

The area of learning and teaching on a whole school basis is highlighted by staff as an area meriting further study and investigation. Research indicates that meaningful SSE, focused on teaching and learning and on improving outcomes for students, encourages delivery of a high quality engaging lesson. Where teachers collaborate to examine their own practice and reflect on and change the way they teach, they improve learning for their students.

Through involvement in the Learning School Project Borrisokane Community College has become a “Community of Practice”. According to Wenger-Treyner “Communities of practice are formed by people who engage in a process of collective learning in a shared domain”.

## **2.1 Literature Review:**

Annually a group of teachers from Borrisokane Community College attend the NAPD organised workshops by educationalists. In October 2015 the LSP committee attended a Mike Hughes talk in Galway. Adapting new learning approaches enhances the quality of teaching and learning in the classroom. Hughes emphasises in order for effective learning and a deep understanding to be achieved it is our job as teachers to get students to engage in activities, think and talk. He outlines in his book, 'The Magenta principles', different ways in which students can interact with information. He shares a list of easy to understand words; reduce, add, change, replace, assemble, arrange, sequence, classify, compare and connect. Various examples of lesson plans from a range of subjects involving one of the key words are described. Feedback and comments from teachers using the Magenta principles are provided.

Whitley Bay High school which was awarded outstanding by Ofsted and no recommendations in their last two MLL equivalent inspections in 2010 and 2013, describes 'if our goal was to make learning an engaging, student-centred experience, then the Magenta principles was the vehicle that enabled us to get there'. As part of the Learning school project various educational books were read seeking easy and quick ways to tweak current strategies that not only increase student engagement and teacher facilitation but also lessons teacher talk time.

Hughes' book outlines a number of tools, templates and techniques that can be adopted to enhance and complement the use of the Magenta principles. The LSP committee used his innovative approach to a seating plan. Students were placed in pairs and within a well-planned out group of 4. The 1234 system addresses differentiation whilst also embracing Hughes idea that group work should be

1/3 ability, 1/3 friends and 1/3 mixed ability. Odd numbers are similar ability and likewise the evens. Ability appropriate questions can be asked to the odd numbers only whilst higher order questions to the even numbers only. The importance of listening is not only emphasised for the teacher but also the students of each other. 'Seating plans should be the first thing every teacher learns to do. It is no excuse if a) you have forgotten to do one; b) you didn't realise you had to do one; or c) you assumed - wrongly - that happy children in self-selected seats will work harder. They will not. They will ignore your wishes with the ardour of fanatics. They will award each other medals for the most perfect attempts to do so. Impose your design on the class from the start. The seating plan should be ready to go before you even meet the students. You are the architect of their education, their expectations and sometimes their ambitions. It isn't too much to ask that you be the arbitrator of where their asses go.' Tom Bennett

A group of teachers on the committee researched how group work and an effective seating plan can enhance learning and encourage increased student engagement through group work. 'While in real life we live and learn with peers, much of learning in schools has been aimed at the individual. This is the case even though the effects of peers on learning is high There are actually many ways peers can influence learning from helping, tutoring, and giving feedback, to simply making school a place to which students want to come. Teachers can play a role in not only instigating the negative influences of peers, but in enhancing the opportunities for peers to develop a sense of belonging, friendships, and positive interactions among peers. Research shows that cooperation has a more powerful impact on student learning than

Individualistic learning and competitive learning, however, it must be structured effectively. ‘Students must *first* learn enough surface knowledge before they can be involved in a structured discussion with their peers’.

John Hattie

The teachers in the LSP research group experienced through utilising some of the magenta principles in group work and giving structure to the classroom that lessons became more exciting and innovative. They found they also enjoyed them more. Despite student’s initial reluctance and demand for notes, they witnessed a shift in their learning experience. Their appreciation as Hughes outlines for novelty and unpredictability kept their interest high. Students became more communicative, talking more and deeper understanding was evident. A choice of strategies as outlined in the book was used to complete their homework; changing key words either into a diagram, a lonely hearts ad, a mime, a short story, a video clip or a rap/song. Through increasing activity in the classroom as Hughes predicted the teachers involved in the action research project observed an increased buzz in the classroom. A deeper understanding by students through manipulation of information that formerly was simply presented and discussed has occurred.

Teachers should continuously strive for excellence and this can only be achieved through continuous development of our professional capacity. The Learning School Project encourages schools to further enhance teaching and learning through continuous research and reflective practice. Combining involvement within a well organised collaborative school’s research project and keeping up to date with the latest educational ideas through workshops and reading current literature teachers can ensure the deliverance of high quality lessons.

The current project aims to address an aspect of Borrisokane Community College's response to improving Learning and Teaching, which will be part of the schools' SSE programme, a balanced and integrated approach to supporting better learning and teaching. This project is also consistent with curriculum changes at Junior Cycle which places a greater emphasis on establishing a classroom culture that promotes effective engagement. From surveys conducted the LSP committee identified effective group work within a classroom was in need of development as a follow on from last year's project associated with effective questioning and they decided on actions they would use to bring about improvement in this area. This project aims to co-ordinate effective group work strategies through a well-planned seating plan and to measure precisely the impact of our initiatives. As a result of this project, it is hoped that the school will achieve a fruitful response to the development of better teaching and learning practices across the school.

### **2.3: Project Details**

In Borrisokane Community College we identified the need for potential enhancement of students' participation in effective group work. We initiated the project by placing importance on a pre-planned and differentiated seating plan. As the project advanced and evolved group work became an equally important aspect of the research project implemented through an effective seating plan.

Firstly, we decided to survey our focus groups on students' preferences for seating plans and group work (Appendix 1). Post analysis of the data received resulted in recognising the importance of utilising varying teaching strategies to enhance the quality of learning through group work in our classrooms.

The LSP committee decided to use a seating plan outlined by Mike Hughes at a workshop the members had attended. This seating plan promotes the differentiated group work setting with the implementation of pair share strategies. The seating plan as outlined above in the literature review was followed. The LSP committee met frequently to discuss and review strategies used and share resources cross curricular.

This Learning School Project helped bring systemic change in the teaching of various different subjects. Through staff and department meetings this range of resources will be disseminated throughout the teaching community. This leads to a continuous reflection on current teaching practices used in Borrisokane Community College and constant change and improvement.

## **2.4 Specific Indicators in your School: Goals**

**PROJECT TEAM:** An objective of the LSP team was to encourage teachers to promote effective group work within an effective and organised seating plan. The team aimed to facilitate discussion amongst staff around the importance of effective group work and to bring staff ideas and concerns back to the group meetings. The team also hoped to acknowledge the benefits of a school wide approach to **literacy** utilising strategies promoted in literature by Mike Hughes and John Hattie. Any relevant learning and teaching tools which improve the quality of group work will be shared with staff through subject department meetings, peer observation sessions and a possible pop up workshop to whole staff at the start of the next academic year. Professional communication is key to achieving this goal. The team hope to maximise the sharing of ideas and resources through communication via staff /students emails, presentations at staff meetings, the school newsletter, announcements and the school website.

**STUDENTS:** The Goal for students was to encourage greater engagement and learning through group- work in an organised learning environment. Student motivation should improve by making the group work centred lessons more engaging and fun. We hoped to equip our students with communication skills which would encourage lifelong learning through team work activities. Each learning activity requiring students to fulfil clearly defined roles and complete specific tasks. Marketplace was one such group work strategy used in the teaching of Gases in Science. (Appendix 3). Students were also given surveys at the start of the year prior to teaching using different group activities within a specific seating plan. Also at the end of the year following time spent experiencing the new seating plan and lesson involving many different teaching strategies involving group work activities. This gave them the opportunity to reflect on the group work activities and the seating plans they had experienced.

The LSP analysed the data to evaluate if improved teaching and learning had taken place.

**SCHOOL:** The LSP team hopes to create a practice which respects and values learning by all. One that sustains as well as enhances teaching. Through sharing this project and resources created, this will promote a collaborative approach in the school to teaching and learning.

It is hoped that by engaging in this LSP project an improvement in the quality of teaching and learning through effective group work will be observed in Borrisokane Community College. It is also hoped that along with our previous involvement with the Learning School Project the school will continue to be a community where practice is shared. A Wenger-Treyer state on their website “Members of a community of practice are practitioners. They develop a shared repertoire of resources, experiences, stories, tools, ways of addressing recurring problems – in short shared practice”.

### **3.4 Methodology Actions**

At the beginning of the school year an LSP committee was set up from volunteers from the teaching body at our first staff meeting in August 2015. It was decided that this committee would review the area of teaching and learning across the school in order to target areas for our school improvement plan. It consisted of 5 teachers from a variety of departments including the Deputy Principal (Science teacher), Science, Irish, French and Maths.

At our first LSP meeting the committee decided to undertake a Learning school project in the area of Effective group work continuing on the work carried out the year previous on effective questioning. This would also help us to gather data in line with School Self Evaluation and would help us when compiling our school improvement plan in Teaching & Learning. The committee felt it was

necessary to survey students in relation to their views on seating plan and group work, to establish their opinions in relation to preferences with regard to group size, improvements that could be made in relation to the quality of communication within the group and ‘the ideal classroom design’ to encourage an engaging learning experience for all.

After the collection of data the LSP group met and analysed the data. It was decided that practical examples of effective group work strategies would be developed in the areas of Science, Maths, French and Irish. Post piloting the group work centred approach the members issued a follow up survey (Appendix 2) to investigate had the views of students changed.

The LSP group met on a regular basis to discuss progress and they worked together to produce the end of year report. Members of the team attended the Mike Hughes conferences, TL21 meetings and the hub sessions in Limerick Education Centre throughout the year. Meetings were always held after these events to share and discuss ideas and resources gathered at the conferences.

### 3.6 Resources

Appendix 3: Marketplace Lesson plan on 2<sup>nd</sup> year Science lesson on Gases.

Appendix 4: Pick the hardest three questions from a list of ten.

Appendix 5: True or False

Appendix 6 : Sequence activity sheet

Appendix 7: Reduce word wall activity sheet

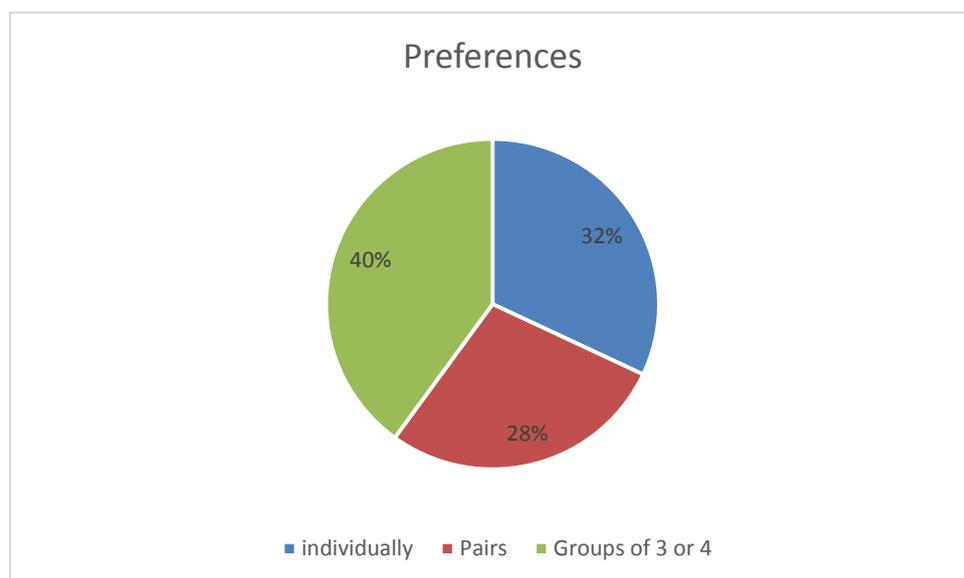
### 3.7 Data collection

The LSP group analysed the results from the focus groups initial survey

Survey Results (quantitative data)

#### Survey 1 ( Appendix 1):

40 % of the students preferred to work in groups of 3 or 4 with 28 % selecting pairs as their top preference. 32% of students surveyed preferred to work individually



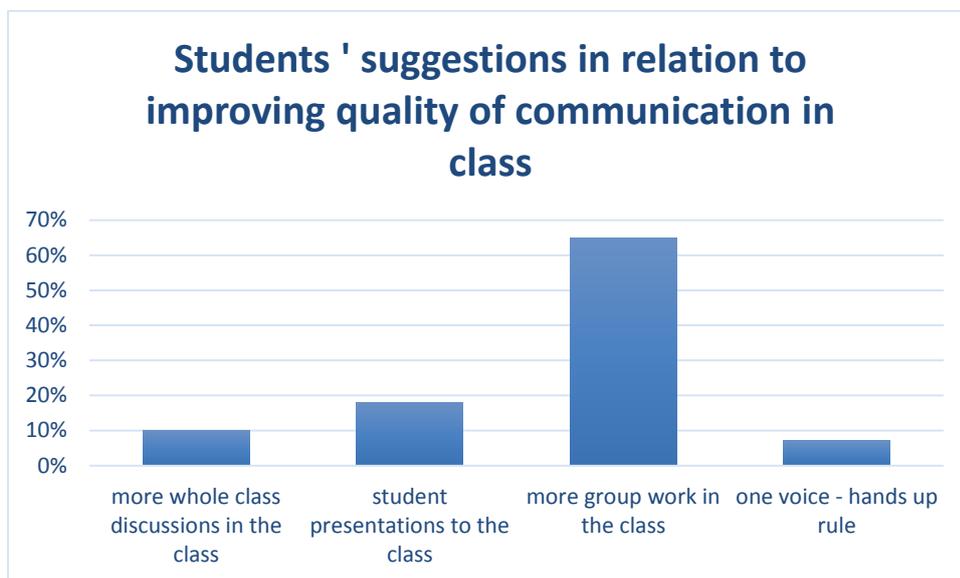
<b>individually</b>	<b>Pairs</b>	<b>Groups of 3 or 4</b>
32%	28%	40%

Analysis of students' rationale for selecting their grouping preference is summarised in the table below:

Preference to <b>work individually</b> supporting statements	Preference to <b>working in pairs</b> supporting statements	Preference to <b>working in 3s or 4s</b>
<p>I prefer to work individually because</p> <p>" I think when working in pairs or groups it's usually one or two people who do all the work and the rest of the students are laid back and relax and do nothing"</p> <p>"I prefer to work on my own as I can't think if the group is too big and someone takes over talking"</p> <p>" too much distraction in groups - The lads are too immature to work in groups properly"</p> <p>" group work can be very noisy with too much talking off the point"</p> <p>" not everyone gets their say in groups. It depends on the group"</p> <p>" pair work better than group work if you are working with someone that knows something"</p>	<p>I prefer to work in pairs because</p> <p>" love working in pairs coz you can bounce ideas off your partner"</p> <p>Pair better than group as you are communicating but not competing to get your voice heard"</p> <p>"Like think pair share exercises "</p> <p>" prefer to work in pairs rather than bigger groups as it can be too loud and everyone talks and no one is heard"</p> <p>" working in pairs means everyone has something to do and we are both busy"</p> <p>" it's fun to work with a friend "</p> <p>‘two is company, 3 is a crowd and 4 is just way too many to get the work done right’</p>	<p>" great to work in bigger groups to Get more work done "</p> <p>" nice to work in 3s and everyone has a job to do "</p> <p>" fun to work with friends"</p> <p>" tasks are better if we can do them together "</p> <p>" we get to help each other out"</p> <p>"No one is left out"</p> <p>"we learn from each other "</p> <p>‘the more the merrier’</p> <p>‘3 or 4 people will get the work done faster’</p> <p>‘good team work with a bigger group’</p> <p>‘ each person in the group plays an important role in getting work done’</p>

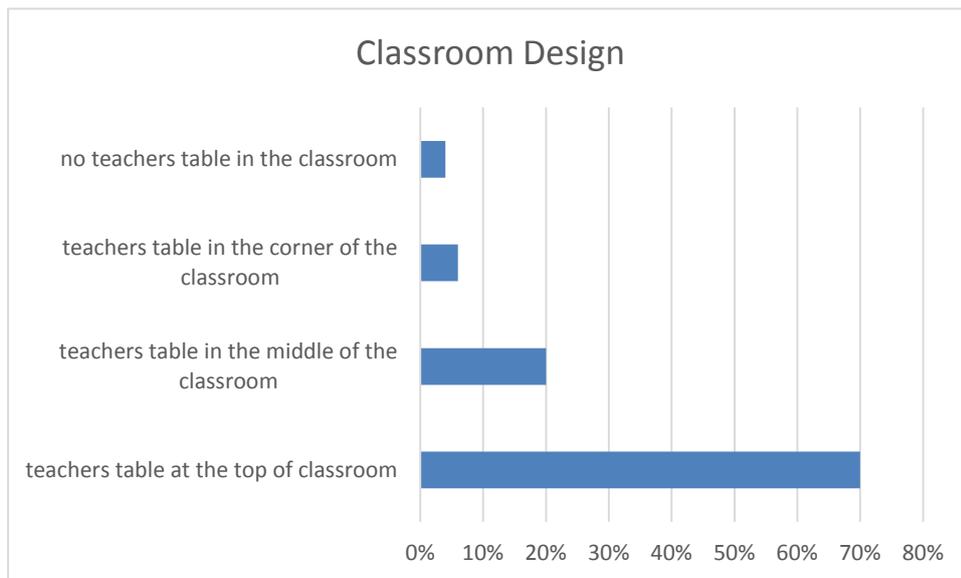
Analysis of student’s suggestions in relation to improving the quality of communication among peers in the class indicated that whole class discussion, student presentations, group work and the hands up one voice rule was predominant with over 60 % highlighting group work as the main activity that would enhance the quality of communication.

more whole class discussions in the class	10%
student presentations to the class	18%
more group work in the class	65%
one voice - hands up rule	7%



When students were asked to design the classroom that would improve the quality of communication among peers in the class, 70 % of the students designed the classroom with the teachers table at the top of the class

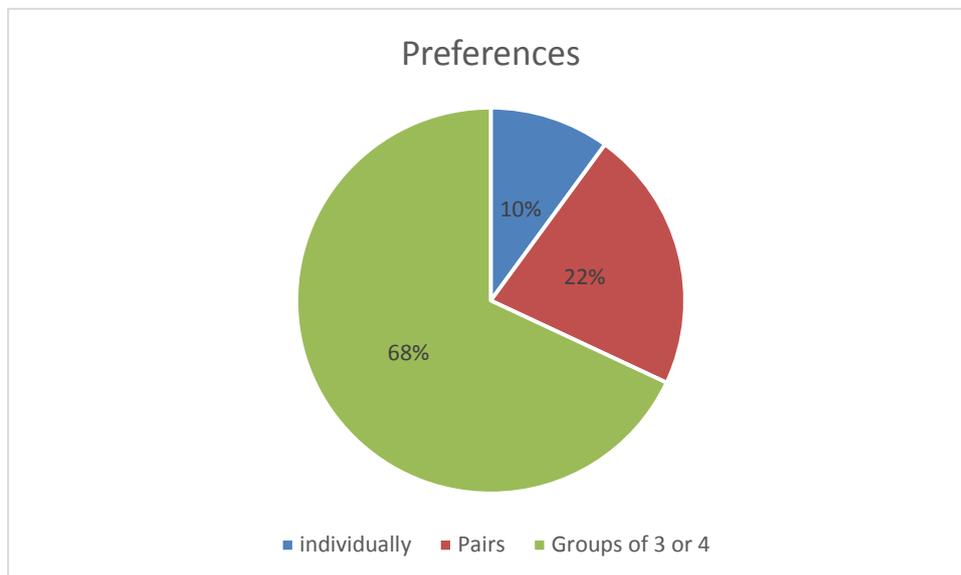
Class room design	
teachers table at the top of classroom	70%
teachers table in the middle of the classroom	20%
teachers table in the corner of the classroom	6%
no teachers table in the classroom	4%



**Results of survey 2 (Appendix 2): feedback from focus group students who participated in the project:**

When students were asked, post participation, for their preferences in relation to working individually, in pairs or in groups of 3 or 4 there was a considerable increase in the number of students opting for groups of 3 or 4 and a decrease in the numbers opting for individual

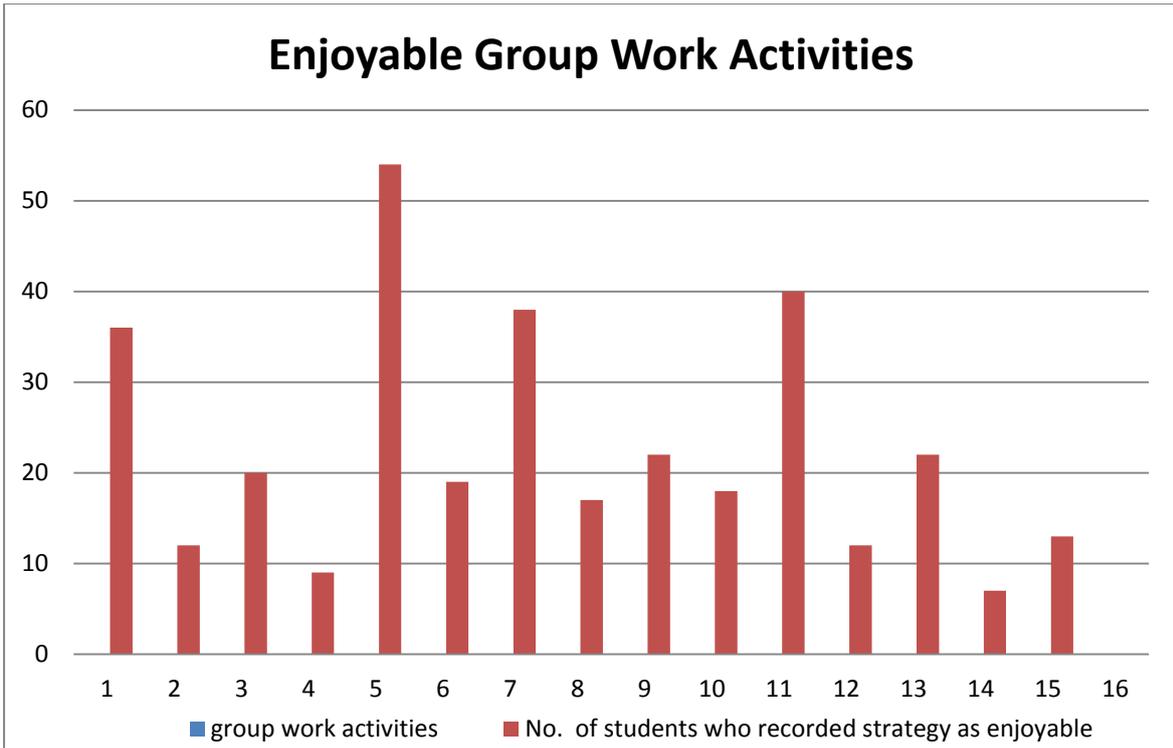
individually	Pairs	Groups of 3 or 4
10%	22%	68%



Students selected on average 2 group activities when asked what group work activities did they enjoy, with seven students saying they liked none of them and 13 in the other category referred to a specific strategy – assembling atomic structures using beads and pipe cleaners.

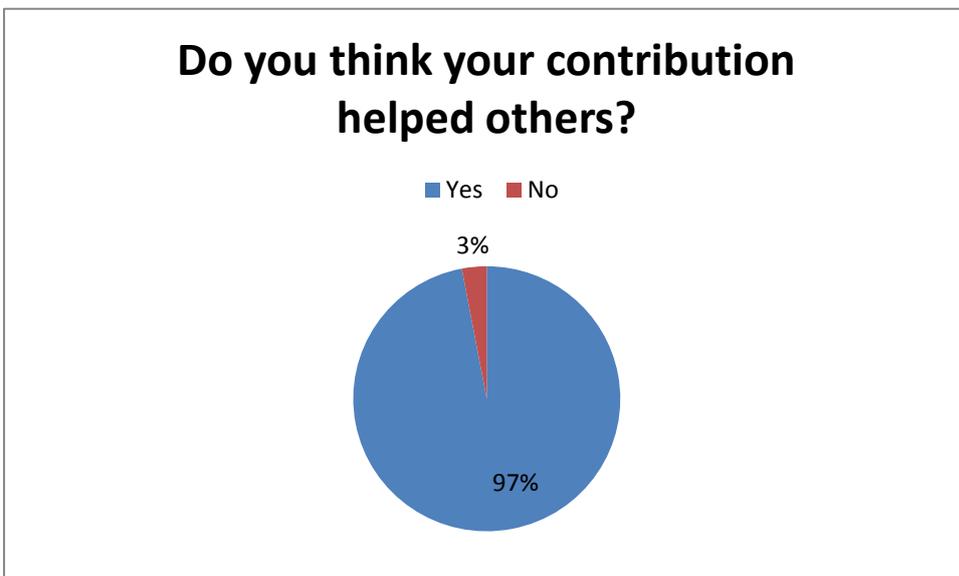
Group brain storming using mind maps proved to be the most popular among target student focus group. Group experiments highlighted by all 3 science classes as the top preference. Other popular strategies were hands on creativity exercise involving playdoh and the marketplace strategy (Appendix 3).

group work activities	No. of students who recorded strategy as enjoyable
market place	36
blue sky	12
pair assessment	20
group assessment	9
group brainstorms using mindmaps	54
effective questioning grids	19
playdough modelling exercises	38
picture rounds	17
group collages/posters	22
kahoot in a group	18
group experiments	40
group flash cards	12
group exam paper work	22
none	7
other	13



The majority of students stated yes to thinking their contribution helps other group members

Do you think your contribution helped others?	
	Percentage
Yes	97
No	3



When students were asked to list the keywords that they associated with group work activities in the class, students made a list of 4 words on average.

Keywords students associated with group work ; Helping ,Working, Enjoying ,Contributing ,Work help learn, Listen and learn ,Fun friendly enjoyable organised, Sharing suggestions, peer assessment, Laughing, Communication ,Working hard together, Experimenting, Team work ,Effective ,Social ,Loud ,Chatty ,Equal ,Understanding, Participate, Actively involved ,Easy ,Kindness, Reporter speaker time keeper ,Helpful, Support, Fun learning ,Busy, Discussions and Decisions ,Work , Interesting ,Educational ,Fun learning

### **Teachers personal reflections (qualitative data)**

#### **Reflection 1.**

Reflection on Junior Certificate key skills recording

I was given the **Blue Sky** strategy to try out with a Junior Certificate class.

This strategy aims to encourage students to use their imagination and manage themselves. You present the students with a problem or something that inspires or encourages them to think for themselves.

Then in twos, they work together to try and solve the problem or quite simply come up with ideas. You set them a time limit for this and remind them that the sky's the limit. They put their ideas on a post it and stick them at various points in the room then they walk around reading each other's post-its. They then see other ideas and can learn from each other. When I read about this strategy I thought it would be difficult to use in a language class as they don't need to

solve problems. But when I looked at what key skills it was trying to incorporate I realised that I just needed to tweak and adapt it to suit my class.

The first time I tried it out was at the beginning of a topic. I showed them a picture of a school and gave each group of two a post it and they had 2 minutes to write down anything that came to mind when they looked at the picture. Then we discussed the words and they realised that they could group the words into sub-categories e.g. Abhair; sórt scoile; áiseanna; rialacha; even mothúcháin!!

When the JCT team came to film the class using this strategy I was nervous enough but I did not want the class to be contrived or false. I decided to follow my plan and slot it in with whatever I had planned to do that week.

I was starting a new poem called “An luichín sa scoil” I had a power point that I always used when teaching this poem. It had sounds and images from the poem that I used to elicit relevant vocabulary prior to reading the poem.

I gave each group of two a dictionary and 2 postits. I show them the images and asked them to write on the postit any thoughts, words or ideas that came into their heads. I reminded them that the sky was the limit as in, there were no limits to their imagination- no right or wrong. “spéir gan teorainn” Their own ideas were important. The students then walked around the class viewing each other’s ideas. We discussed these and compared them on the board. Other questions came up during this discussion which was great and very relevant to the poem even though they hadn’t even read it yet.

Then I played the sounds effects and they did the same thing.

Then we read the poem and the students were able to understand it easily because they had already learned the vocabulary.

I enjoyed the class the students seem to enjoy the class and when I questioned them and corrected their homework they were all able to answer the basic questions about the poem.

On the other hand, some students didn't really read other peoples' post-its. They just glanced at them.

Overall it was a very simple strategy that I would use again.

## **Reflection 2**

As part of the LSP 7 group in Borrisokane Community College I investigated how seating arrangements and grouping of students can help encourage learning. All my classes happened to be junior cert exam classes and leaving certs so I was somewhat limited as to how much I could do.

As my junior cert science class had to do a course work B investigation which involved working in groups I decided to monitor them. Initially to make sure no student was isolated by letting friends pair off with friends we randomly grouped students using a number system. The students themselves thought this was the fairest method but as time went on I felt that some of the groups were unbalanced in terms of weak academic students and strong academic students. I was pleasantly surprised when one group of students who would have been average academically came to me and asked if they could be switched to allow a stronger science student to work with them. We then changed the groups where necessary to try to have at least one strong student in each group.

Personally I feel this was very beneficial to all as the students realised that communication/collaboration in a group is very important as a learning tool and they had to come out of their comfort zone where by they had to work with people that they themselves may not have chosen to.

In relation to seating arrangement when working in groups I tried to get the students to sit two facing two as this way everyone could engage in conversation and had to participate. Again when arranging the group, we would try to have a balance of levels of ability. We tried not to have two weaker students beside each other as we felt that they may choose to opt out and just

converse between themselves. Everyone was encouraged to partake and everyone had to respect each other by listening to their peers.

When the time came to do the second activity in course work by the students themselves asked if the groups could be chosen keeping a mix of abilities in mind. I felt they had learned how important good communication in groups is and how everybody can have something valuable to add.

### **Reflection 3**

As a qualitative data gathering exercise personal reflections completed by each member of the team not only compliment the main body of results but ensure each teacher has the opportunity to self-assess their on attributes and developments

The LSP journey is one I have frequently travelled on an annual basis since Borrisokane Community Colleges original involvement in LSP 2. So I am aware of the frame work and how its utilisation can enhance learning and teaching in many different ways.

Leading the LSP team this year, provided me with the opportunity to gain a greater insight into the development of a project as a whole.

Initially seating plan seemed to be a priority - as an extension from effective questioning we initially proposed the idea of effecting seat plans. However, the concept of an effective seating plan as the basis of LSP soon morphed into group work as the central focus.

Over the course of my group work focus session I found that Group work only works if students have a knowledge base - students must have knowledge prerequisite of a topic / experiment prior to entering the group scenario.

Group work is more effective if each member of the group is assigned roles e.g. reporter, time keeper etc.

Inclusion of a group exercise during a class to enhance the quality of the main body of the lesson is more effective than having a group established for the entire 40 min period

The teacher or the facilitator - plays an essential role in ensuring the lesson runs smoothly

A well prepared lesson with group work Organisation prioritised will elevate lesson quality

In order of learning outcomes to be achieved students must know the success criteria and the start and how to achieve the most out of a group work session - the clear instructions on how to actually gain from a group work session is needed

Pair testing - where 2 students work together to answer a series of questions proved very popular

The differentiated group worked well once all students - higher and lower ability had a job to do and were aware of how their contribution was essential to the team

Emphasis should be placed on the importance of teamwork—Before the groups are formed and the task is set out, teachers should make clear why this particular assignment is being done in groups highlighting the success criteria in relation to subject matter and the importance of collaboration

Showing students how to learn not just what to learn is essential - Teach teamwork skills—Most students don't come to group work knowing how to function effectively in groups. teachers need to talk about the responsibilities members have to the group (such as how sometimes individual goals and priorities must be relinquished in favour of group goals) and about what members have the right to expect from their group Students need strategies for dealing with members who are not doing their fair share as this was highlighted as a group work issue in our first survey. They need ideas about constructively resolving disagreement. They need advice on time management.

And who goes into the group is a big one! Most students like to work with their friend but on discussion if the group has a competitive style then the groups lend itself towards ensure that there are well able characters on the group

Thoughtful consideration group formation—Most students prefer forming their own groups, and in some studies these groups are more productive. In other research, students in these groups “enjoy” the experience of working together, but they don’t always get a lot done. In most professional contexts, people don’t get to choose their project partners. If the goal is for students to learn how to work with others whom they don’t know, then the teacher should form the groups. There are many ways groups can be formed and many criteria that can be used to assemble groups. Groups should be formed in a way that furthers the learning goals of the group activity.

A teacher needs to know their class - know their individual students and Taylor that lesson to include a group exercise that will work for the specify groups in question.

Group work with an effective seating plan shouldn't be placed at no 1 in relation to key priority it should be incorporated into a well-established lesson to elevate the quality. Building up a bank of tangible resources that can be utilised in a group work setting worked well for this pilot project and we hope this will continue throughout the whole class ok dissemination of lsp7 to all staff of the lesson as a whole.

## **Reflection 4**

Mike Hughes' magenta principals are "an approach to teaching based on the premise that learning should be both exciting and engaging". At the conferences Mike spoke in depth about what we as teachers can do to make this happen. When you leave his conferences you feel inspired to work harder to engage students, facilitate independent learning and to create an environment where understanding is key.

The key question in Hughes' workshops was "what are we asking students to do with information?". As teachers do we want students to know or understand? He spoke of different teaching methodologies, many of which we already use such as effective seating plans and group work. He spoke of getting students to reduce or change information, to help promote understanding. The main point I have taken from the conferences is that no matter what teaching methodology you are using, effective questioning is paramount to helping students delve deeper into the information and promote their understanding. Challenging students to analyse and evaluate information is of huge importance but is of course already the key point of blooms taxonomy.

Throughout the 3 days of Hughes conference it was emphasised that the "bag of tricks" was not enough to promote deep learning, we as teachers must facilitate all classwork and push students to think deeper and deeper about what they are learning and to reflect and evaluate their own learning, we must also of course make it fun to make students want to learn. Hughes highly recommended videoing lessons to help the teacher reflect on professional practise and improve on their own skills.

We as teachers need to encourage independent learning and try to encourage students to think for themselves. We must effectively facilitate learning and engage students rather than occupy them.

### **Reflection 5**

Consistent consideration and utilisation of different group work strategies is vital to ensure an engaging and fun lesson is delivered. Whilst curriculum constraints can at times prevent teachers from using a range of activities that may be a little more time consuming it is important with the new Junior cycle that this change is embraced and becoming familiar with a range of strategies encouraged. Whilst many of the group activities including Marketplace can take time to prepare prior to the lesson once completed can be used for all future lessons. It can be a little daunting for teachers to move out of their comfort zone from teaching topics as they have done successfully for years to tweaking them to bring about a deeper more engaging lesson and understanding. It is important that teachers teaching continuously up skill and utilise not only a range of teaching and learning strategies but the use of technology to support learning.

I found students attitudes and those from home at times challenging and could prevent one from moving from delivery of a lecture style ‘chalk and talk’ lesson to facilitating a lesson where students are encouraged to take responsibility for their own learning. Often opinions expressed included that learning be supported by frequent distribution of hand outs and less reliance on the use of technology. However group activities and technology are vital to encouraging student self-directed learning. Quizzes such as Kahoot are an excellent resource and fun way after a group based activity for students to reflect and assess their own learning.

Over the year I found that students started to appreciate the various activities and post assessment realised that they could more easily recall keywords and increased enjoyment in the subject was evident. Other barriers one can face are coping with the individual student issues including anxiety or other behaviour or learning difficulties. One student in the class avoided non-routine based activities and disliked any change in seating arrangements. Unfortunately at times this was a difficult decision whether to prioritise the needs of an individual to maintain less talk time and routine against the overall needs of the class. Despite these challenges overall I found the classes and lessons more enjoyable when I allowed students more time to discuss and chat topics amongst themselves whilst overseeing that correct information and facts were being shared.

Following on from this year's LSP research project I plan to continue to use more group based activities in lessons next year. I will always pre arrange my seating plan taking into account abilities and friendships and change this a few times during the year. Whilst using group activities periodically is important to encourage deep understanding and engaging lessons individual based activities and many of the traditional ways to approach teaching are still important to use and also lead to effective teaching and learning. i.e. discovery learning of an experiment as was part of teacher training in the 90's.! From my own personal experience a balanced varied teaching approach open to considering and experimenting new ideas maintains an interactive learning environment. From last year's LSP project not only is it important that group work activities are frequently included in lessons underpinned by a predetermined effective seating plan but that all activities are based on a series of effective questions throughout the task to encourage deep understanding.

### **3.7 Results and General Findings**

Once data analysis was completed; the LSP 7 team met to discuss the general findings of LSP 7 which highlighted that as teachers we have learned a great deal through continuous reflection during this process. We agreed that in order for deep understanding to be achieved students must be engaged in the learning process. Group work activities encourage communication and talking to aid understanding. These group work strategies need to be part of teaching and learning within 1<sup>st</sup> year so that students can become familiar with their various formats. Vital to ensuring the success of a group work activity is the seating plan that underpins it. The correct abilities and personalities need to be placed working together. However it is also important that not all activities are solely group based as others are equally as important including times of self-reflection and peer assessment. In the current climate of educational change these strategies and group work activities are being emphasised as important to ensuring the key skills required as part of the new Junior cycle programme are delivered by all teachers. This research project has proven extremely timely and will be of benefit greatly to the whole school learning environment moving forward.

#### **4.1 Experience of Learning School Dimension:**

**Students:** The Learning School Project has a long term aim with regard to students in Borrisokane Community College which will continue after this project has concluded. The promotion of Effective group work allows students to engage in the learning process and encourages thinking, communication and collaboration with peers in an organised setting.

**Project team:** The members of the project team found this to be an extremely positive experience. Collaboration and discussion between teachers from various subject departments and different management levels is highly beneficial to continuously improving teaching and learning. While the main motivation of this learning school project was the promotion of Effective group work, discussions focused on teaching and learning and ways to consistently challenge and meet the needs of our students. This project has encouraged annual CPD of teachers and attendance to educational conferences. There is an awareness of the staff of Mike Hughes and his ideas. It is now planned that a range of current educational reading material and books will be available to staff. By encouraging teachers to read and keep up to date on new ideas and methodologies that can be used in the classroom it will encourage continuous professional development and delivery of high quality lessons. Electronic version of all resources used are available to all staff which they can access through the 365 SharePoint. An LSP group work folder in the staffroom provides tangible resources for all staff.

The team engaged continuously in a process of self-reflection and found this very worthwhile all participants were encouraged to reflect on their own experiences by completing the staff survey and providing feedback. The team found meetings at Limerick Education Centre were very helpful; and it was a great opportunity to speak to teachers from other schools and to share ideas on this and other projects. School visits by Dr Carmel O' Doherty and Grainne Dennison were also very helpful in providing guidance, ideas on how to develop this into the future and support to the team.

The members of the team felt that this project got teachers talking and thinking about group work strategies both within the classroom and school wide. It encouraged collaboration and collegiality within departments and it is hoped

that the positive experiences teachers had of this process will encourage more collaboration between different departments in the future. Communication skills were improved upon, there was a very high level of robust, honest and open communication within this highly committed group and this was feedback to staff appropriately.

The LSP team acknowledges that data collection and management is a very time consuming process and appreciate the timely fashion in which surveys were returned. The LSP team found that while qualitative data can give personal insights it can be quite difficult to analyse and collate results. Although the questionnaires were informative, it was time consuming to devise analyse and collate information and that verbal feedback can be just as informative. It is also more informal and personal, which is especially important given our pastoral ethos in our school.

**School:** The project was initiated at the first staff meeting of the academic year 2015-2016 Staff were informed of developments via email and at staff meetings. Teachers were given the opportunity to suggest ideas, give feedback or comment on the process informally to members of the LSP team and through e-mails. Results from the project will be circulated to staff via e-mail and disseminated interdepartmentally at the end of the academic year and to the staff as a whole at the start of the next academic year. The findings of the project will also have made available to staff via e-mail. The resource bank of group work strategies and presentation will also be shared amongst all ETB schools in Tipperary in September.

## **4.2 Learning in the School – reflect, record, share**

This is not the first time the school engaged in the Learning School Project, and the school has previously engaged in a collaborative learning projects in the past. We believe that LSP has great merits for our school: mainly the improvement of teaching and learning and the development of collegiality and collaboration amongst staff, while simultaneously improving staff and students' skills. The principals of the Learning school project, Reflect, Record and Share also go well with the principles of school self-evaluation.

It is hoped to sustain this project in the future in a viable way to promote Effective Group work and improved teaching and learning in Borrisokane Community College. It is hoped that the Data collected will be used to suggest targets for our school improvement plan to be addressed in the coming years.

## **4.3 System Benefits**

LSP is a positive experience in relation to promoting teaching and learning in the school and the development of collaboration amongst staff. We would highly recommend it to other schools. According to the DES School self-evaluation Guidelines 2013 “Experience and research in Ireland and in many countries show us that some of the most beneficial changes in schools occur when the principal and teachers collaborate in a focussed way to improve how they teach and assess students’ learning. By asking questions of themselves about how teaching takes place and how well students are learning, teachers can readily identify what needs to change within the school to get better outcomes for their students”. Involvement in one LSP project often leads to contribution and inclusion in future projects. The LSP is not an open and closed project, like learning it is continuous.

## **Section 5: Conclusions and Recommendations**

The LSP team believes for Effective group work to move forward in the school the following recommendations should be considered:

Data gathered in this LSP project should be used to inform the setting of targets and actions over the next three years for the school improvement plan.

In Conclusion, we have found being part of the Learning school project allows a school to engage more fully in the process of school self-evaluation. School Self-Evaluation according to the DES guidelines 2012 empowers a school community to affirm good practice, to identify areas that merit improvement and to decide on actions that should be taken to bring about improvements in those areas. In short everything that the Learning School Project aims to achieve. Finally, the LSP team would like to thanks all the staff who got involved in the project and gave their time and support to make sure the project was a worthwhile experience for all members of the school community.

## **References**

John Hattie 2011 : ‘Visible learning for Teachers : Maximising Impact on Learning’

Mike Hughes 2014: The Magenta Principles, engagement, depth and challenge in the classroom’.

**School self-evaluation Guidelines. 2012**

## Appendix 1.

### Room Seating Plan and Group Work

Students- Have your Say!!

1. In class, do you prefer to work individually, in pairs or in groups of 3 or 4?

Please complete the table below by placing a tick beside your preference

Individually	
In pairs	
In groups of 3 or 4	

2. Give a reason for your preference
  
  
  
  
  
  
  
  
  
  
3. What suggestions do you have in relation to improving the quality of communication among peers in the class? Give a reason for your suggestions

4. In the space below design the classroom that would improve the quality of communication among peers in the class



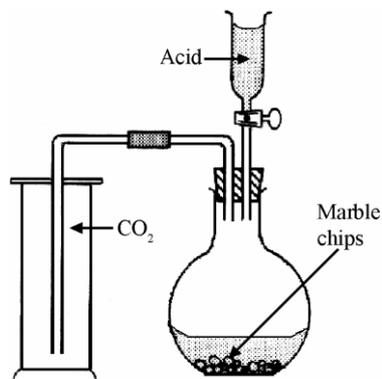
### **Appendix 3:**

#### **Marketplace : Group work Teaching Strategy.**

- Assign Roles in Team of 4. One of the 4 coloured sections given to each member.
- 15 minutes to read each section and represent on a section of the placement mat.
- Only translate information into diagram explanations and 3 key words.
- Seller (one team member) sells gas including Play doh product – Sales pitch
- Other 3 members spend 3 minutes at every other stall learning all the other new gases. Each team member start at a different stall.
- For last 3 minutes all members come back to their original team to share all new information gathered.
- All students have a written test on all gases from the other stalls. Gas that is answered the best by all students is the best stall.

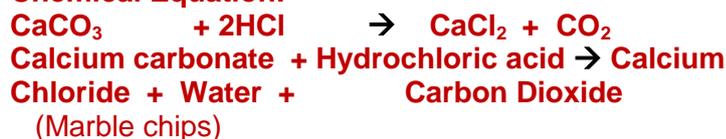
Hand outs given on Water, Carbon Dioxide , Oxygen, Air and Hydrogen to five different groups. Sample below.

# Carbon Dioxide:



## 1. How to make it?

**Chemical Equation:**

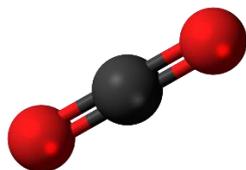
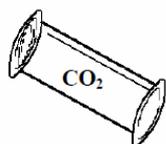


**Test for CO<sub>2</sub>:** Limewater goes milky.

**Limewater + Carbon Dioxide → Calcium Carbonate + Water**



**2. To show that carbon dioxide does not support combustion :** Light a wooden splint , the splint will extinguish in carbon dioxide showing it does not support combustion.



**Carbon dioxide has a greater density than air . Pour down and extinguishes a candle.**

### 1. Uses:

1. Fizzy drinks
2. Fire extinguishers
3. Special effects on stage (dry ice in water cause a 'smoke' effect)
4. Look up more on ipad.

Carbon Dioxide Molecule – Covalent Bonding Model Make with PLAYDOH!

## 3. Geography: ACID RAIN

If a strip of moist blue litmus paper and a strip of moist red litmus paper are put into a jar of carbon dioxide what effect, if any, does the gas have on them? Carbon dioxide in the air can dissolve in rain water to form carbonic acid, H<sub>2</sub>CO<sub>3</sub> and hence moist blue litmus paper goes red.



Carbonic acid is a weak acid. The hydrogen ions from carbonic acid give natural rain water a slightly acid pH value of 5.6. Over millions of years this very dilute acidic solution has been responsible for the formation of caves in areas of limestone rocks. Limestone is made of calcium carbonate, which reacts with acids.

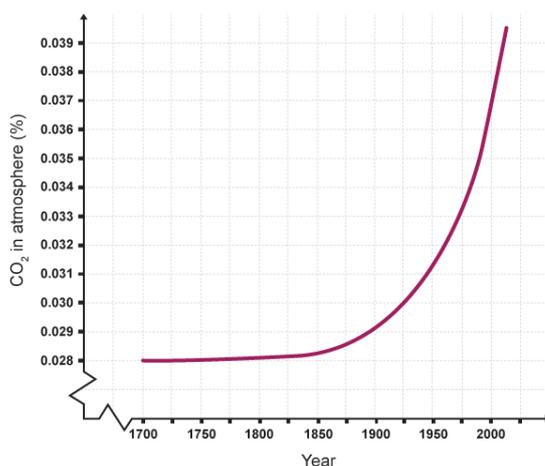
calcium carbonate + acid  $\rightarrow$  calcium salt + water + carbon dioxide

This is the experiment you do to prepare CO<sub>2</sub> in class.

**Acid rain** damages the waxy layer on the leaves of trees. This makes it more difficult for trees to absorb the minerals they need for healthy growth and they may die. Acid rain also makes rivers and lakes too acidic for some aquatic life to survive

#### 4. Global Warming:

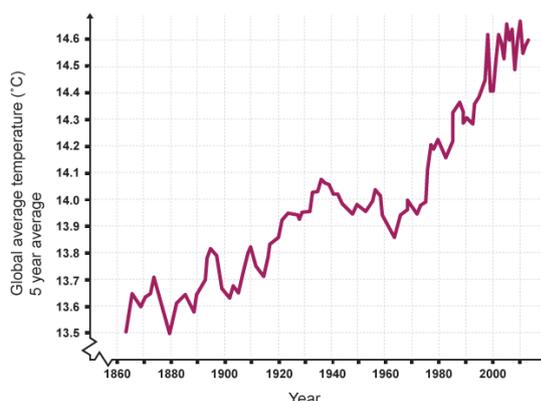
Fossil fuels produce carbon dioxide when they are burned. When land is cleared for timber and farms (deforestation), there are fewer trees to remove carbon dioxide from the atmosphere for photosynthesis. If the fallen trees are



burned or left to rot, additional carbon dioxide is released into the atmosphere. As the concentration of greenhouse gases in the atmosphere has increased, so too has the average global temperature. This is what scientists mean when they talk about global warming. Carbon dioxide emissions from human activities have increased the amount of this gas in the atmosphere.

#### Global average temperature

The average global temperature has changed over time. Although some years are colder than the year before, there has been a trend for the average temperature to rise.

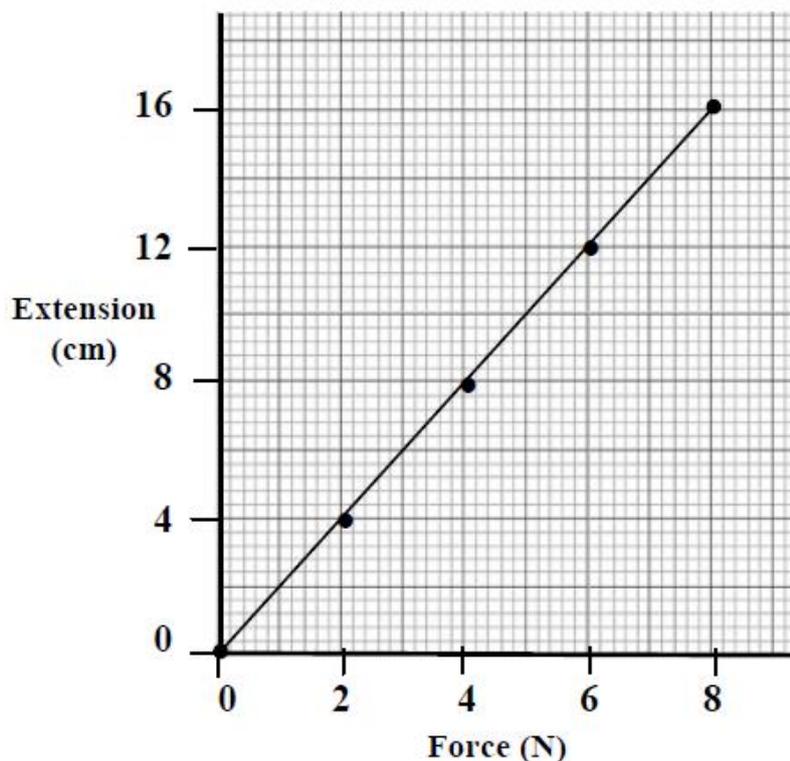


The general increase in global average temperature follows a similar trend to the percentage of carbon dioxide in the atmosphere. However, taking into account other data, the consensus of scientific opinion is that the two are linked this way. This is why we are encouraged to reduce emissions of carbon dioxide, for example by walking instead of taking the car.

## Appendix 4: Reduce

### Pick the hardest 3 questions from the list? Why?

1. Is there gravity on the moon?
2. Why is there an atmosphere on Earth but not on the moon?
3. Explain the term friction.
4. Friction is an example of a force. Give another example of a force.
5. The stone had a mass of 2 kg. What was the weight of the stone on earth? Give the unit.
6. How does your weight vary as you travel from earth to the moon?
7. Distinguish between *weight* and *mass*.
8. A student investigated the relationship between the extension of a spring and the force applied to it. The equipment shown in the diagram was used. The data collected is shown in the table. What conclusion would you draw from this investigation?



force applied to it. The equipment shown in the diagram was used. The data collected is shown in the table. What conclusion would you draw from this investigation?

9. State Hooke's law.
10. Give two effects that gravity has on your everyday life.

### Appendix 5: True or False

Statement	True	False
A sex cell is known as a gamete		
Implantation occurs when the dividing zygote attaches itself to the lining of the fallopian tube		
Fertilisation occurs when a sperm fuses with a zygote		
Menstruation is the shedding of the lining of the uterus		
Fertilisation is the fusion between male and female gametes resulting in a zygote		
After 8 weeks the embryo is recognisable as a human and is the called a foetus		
Fertilisation occurs in the Uterus		
Ovulation is the release of an egg from the ovary and occurs around day 10		
The menstrual cycle lasts about 28 days		
The zygote undergoes cell division it then becomes a foetus		
Human pregnancy usually lasts about 38 weeks		

**Pick True or False for the following statements.**

**Appendix 6: Sequence**

**Human Reproduction:**

Testes
Ovary
Scrotum
Sperm duct
Fallopian Tube
Prostate gland
Womb(Uterus)
Penis
Cervix
Vagina

**Column B**

Match the words in Column A with a function in Column B.

**Column A**

To produce eggs
To deliver sperm into the woman's body
To carry the egg towards the womb. Fertilisation occurs here.
To hold the testes outside body, which favours sperm production (temp = 2°C lower)
To hold the baby during pregnancy
The entrance to the womb
To produce sperm
To hold the penis during sexual intercourse.
To allow childbirth
To carry sperm from the testes to the penis
To produce fluids which nourish the sperm (fluid + sperm = semen)

**Sequence the following steps in the correct order for the Menstrual Cycle 1 – 4 : ( 28 day cycle)**

<b>Egg is released from the ovary approx. on day 14.</b>
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<b>Lining of the uterus breaks down (5 days) and a new egg matures.</b>
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<b>Lining remains in place for approx. 13 days. If a fertilised egg is not implanted lining breaks down again.</b>
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<b>New lining develops ready for possibility of fertilised egg.</b>
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