

Belper School & Sixth Form Centre: Mathematics Department

Homework Procedure Document

(to be read in conjunction with the whole school homework policy – July 2015)

At its best, homework should;

- Foster a genuine interest in Mathematics as a subject.
- Be an essential part of the learning process.
- Consolidate and reinforce skills taught in lessons.
- Help students to develop a good working routine.
- Reflect our principles of differentiation and allow all students to achieve their maximum potential.
- Enable students to develop independence in their learning

Homework should be set regularly but the tasks should, in general, be short and focused. They should also be varied so that the student is able to foster different study skills. It could include opportunities for longer tasks that enable them to use a wider range of mathematical skills.

The aim of this policy is to suggest ways in which we can embrace these ideas in a meaningful way, especially with our commitment to all ability groups in KS3, and to give some advice on marking, rewards and sanctions so that we can be consistent in the feedback that we give to students.

General information

- Mathematics homework should be set at least **once every fortnight** for each class which should enable the teacher to give appropriate feedback in accordance with the marking policy. The time that students spend on homework will naturally vary depending upon both the nature of the task and the ability of the student, but the departmental guidelines are:

Year 7	Year 8 & 9	Years 10 - 13
30 – 45 minutes	45 – 60 minutes	60 – 90 minutes

- In weeks where a homework task is not set, it is vital, particularly at GCSE and A-level that we set the expectation that students will be using revision guides or the mymaths website to review and consolidate work done in class. On occasion, it may be appropriate to set them some questions which can be peer/self-assessed in class the following lesson.
- Given that we have no homework timetable, when we set and collect this homework is entirely up to the teacher concerned and I would strongly recommend that you get into a routine at the start of the year with each class that fits in with your timetable and workload.
- Setting homework should be allocated time in the lesson for careful explanation and recording in the student planner. It should not be rushed through at the end.
- If detailed instructions are needed, it may be better to write them out on a sheet and give it to every student, rather than expecting them to copy it into their planners as some students may find this very difficult.
- You will need to inform the students when you expect the work to be handed in (most students record the homework information on the 'handing-in' day). Also, try to remind them to write 'Homework' as a title as this is useful for monitoring purposes.

- It is usual practice whenever possible to leave at least one lesson in between setting and collecting the homework to give students the chance to speak to you about any problems.
- The dates on which you set homework should be recorded in your own (electronic) markbook so that you have your own record of what you have set in case of any queries from Heads of Year or the Leadership Group. It can also be useful as a check on students who may have been absent. Parents will also ask you about the frequency with which you set homework, especially at consultation evenings, although this is less likely if you try to ensure students always write their homework down.

Homework tasks

We tend to think of homework as a written exercise and whilst this is perfectly acceptable, it can lead to excess marking and become routine for the student. In this section I have tried to give some suggestions both for standard written tasks and alternative tasks which would bring more variety into homework assignments and could lead to some interesting discussions in follow-up lessons!

- ❖ Two or three different worksheets set at different ability levels (but not necessarily on the same topic) with questions that consolidate work done in class, enabling you to assess each student's progress on a particular topic. Students should either be given the appropriate sheet or be encouraged to choose a sheet that will enable them to perform at their best.
- ❖ One, clearly differentiated worksheet with a large range of questions on a particular topic. Students should be encouraged to attempt certain questions and perhaps setting time guidelines could be useful for some students! Again, the questions should enable you to assess how well a student has progressed on that topic.
- ❖ Revision questions to help them to prepare for tests or GCSE/A-level examinations.
- ❖ Working on a recommended website e.g. www.mymaths.co.uk
- ❖ A learning homework, where students have to commit facts to memory or consolidate techniques that have already been worked on in class. This could be used in many different topic areas, some examples being:
 - Number sets. Ask them to learn definitions/examples of primes, squares, cubes, triangular numbers, etc.
 - Area formulae for different shapes e.g. triangle, trapezium, circle, etc.
 - Angle facts. Could include angles in lines and/or polygons.
 - How to add/multiply/divide two fractions.
 - How to construct a perpendicular bisector.
 - Fraction/decimal/%. Give them a table of some key conversions such as:

Fraction	Decimal	Percentage
$\frac{1}{10}$	0.1	10
$\frac{1}{5}$	0.2	20
$\frac{1}{4}$	0.25	25

Obviously, this would need to be followed up next lesson, possibly in a starter activity or maybe a discussion about their approach to the task – they could learn a lot from each other's methods. You could even consider asking them to do a self- assessment about how useful they felt the exercise was!

- ❖ A short puzzle, which should be presented in an open-ended fashion, where students are expected to investigate a mathematical situation and write down their findings. I would recommend that in the following lesson students are asked to share their results with the class, which would hopefully promote a useful discussion about the overall solution.

There are lots of these problems in magazines in the Maths 'library' in the office and I would suggest looking at the Maths challenge papers too. The internet naturally has lots of different possibilities – you just need to find some that interest you! I suggest you look at www.nrich.math.org.uk for starters! Some examples might be:

- A 5-pint jug, a 3-pint jug and a load of water! How could you get **exactly** 4 pints of water?
 - How many of the numbers from 1 to 20 can you make using four 4's?
 - Totals of squares, rectangles, etc on a 1-100 square
 - If the sum of two numbers is 17, what is the greatest product they could have? What if there was 3 numbers?
 - How many diagonals are there on a hexagon? Octagon? Decagon? Can you generalise it for an n-sided polygon?
- ❖ A research task, where students need to find out information about a particular topic or perhaps collect some data to use in the next lesson. Some examples might be:
 - Find out about π , Fibonacci numbers, etc
 - Use the Internet to look up famous mathematical figures such as Pythagoras, Euler, etc.
 - Choose a page and make a tally chart to show the number of letters in each of the first 50 words.
 - Throw three coins 40 times and record how many times each different outcome occurs.
 - ❖ Information posters or 'decorative' mathematical diagrams can be a really useful homework to set as it will generate display work for your classroom and it should enable all students to produce something in line with their ability. This could be used in almost any topic, but some typical examples include:
 - Design a co-ordinate diagram using 2 (or 4) quadrants.
 - Create a diagram from the pieces of a tangram that was designed in class.
 - Produce a display piece illustrating one of the four different geometrical transformations.
 - Do a sheet explaining reflective and rotational symmetry.
 - Explain the difference between decimal places and significant figures when making approximations.
 - ❖ Writing up project work to put in their student folios can be a good use of homework time but only if it follows on naturally from the work done in class. I would recommend setting specific targets such as drafting a plan of their work or collecting results from their diagrams or even trying to figure out a relationship from a table of results.

Homework sanctions

Under normal circumstances we should expect all students to attempt homework to the best of their ability and to hand it in on time. Students who do not are subject to the following sanctions at the discretion of the individual teacher:

- The matter is discussed with the student, a short note to parents is written in their organiser and a new deadline is set.
- A lunchtime detention is arranged for the student at the next possible opportunity. This should be recorded as an incident on the school behaviour system.
- If a student misses 2 lunchtime detentions, the school office should be informed and an after-school faculty detention (15:00 to 15:30) on the next possible Wednesday is set. The office will send out the necessary letter to parents.
- If a student does not make the after-school faculty detention then the office should once again be informed and a whole school detention is imposed by the leadership group.
- If homework is consistently not done by individual students then the Head of Department should be informed as further action may well be necessary.

Recording student performance

- Unless it is an examination paper or a review that can be levelled appropriately, we should avoid giving scores back to students. In accordance with our marking policy, we should carry out either an acknowledgement or in-depth mark according to what is appropriate at that time. It is also important that in your (electronic) markbook, you record performance in the following way **based on the standard expected from that student**

P – poor
S – satisfactory
G – good
E – excellent
a – absent

A circle should be used to indicate if homework is not handed in on time (and then filled in as indicated above!) e.g. (G) represents a good homework handed in late.

- Stickers and merits could and should be used to reward outstanding effort and we also have 'spot' prizes that we can give out. Postcards can also be filled in and passed to the main office if a student completes an outstanding piece of work, which is well beyond what you would expect for that student. Rewards of this type should be recorded on the school's merit system on e-portal.