

Southend High School for Girls



Assessment Policy for Chemistry

Our assessment policy and procedures are underpinned by three key questions:

1. Where is the learning going?
2. Where is the learner now?
3. How does the learner get there?
(Dylan Wiliam)

Our students should be able to answer these two questions:

1. What am I doing well in the subject?
2. What do I need to do to improve my work in the subject?

At SHSG we see assessment, in all its forms, as an integral part of teaching and learning and as such it is inextricably linked to our curriculum.

We use three broad overarching forms of assessment at Southend High School for Girls:

1. Diagnostic assessment – assessment used to determine what students already know (usually at the start of a lesson / unit)
2. Formative assessment (responsive teaching) – assessment used during the learning process to provide feedback and encourage students to act upon it to make improvements
3. Summative assessment (in-school summative assessment and nationally standardised summative assessment) – used at the end of the learning process as a measure of where students are in their learning.

KS3

By the end of KS3 students should be able to:

- Demonstrate a good understanding of the chemical concepts met during KS3 chemistry:
 - The particle model and the properties of matter,
 - Trends within the Periodic table,
 - Physical changes and chemical reactions,
 - Mixtures and their separation techniques,
 - Atoms, elements, compounds, and mixtures,
 - Energy changes in chemical reactions,
 - Displacement reactions and associated equations,
 - Acids and alkalis and their reactions,
 - The structure of the earth and its atmosphere.
- Understand the impacts that humans have on the environment through the production of pollutants to meet the demands of our consumerism.

- Interpret and analyse data from experiments and observations, drawing conclusions and making connections between data and chemical concepts.
- Use and understand appropriate scientific terminology and vocabulary related to chemistry.
- Develop practical skills such as using a Bunsen burner, handling laboratory equipment, and performing chemical experiments safely.
- Be prepared for KS4 Chemistry.

KS4

By the end of KS4 students should be able to:

- Demonstrate a secure understanding of chemical concepts met during KS4 chemistry including:
 - Structure and bonding and how this related to the properties of materials,
 - Organic chemistry including fractional distillation, alkanes, alkenes, alcohols and carboxylic acids and their properties,
 - Energy changes in a reaction and associated calculations,
 - Collision theory and factors that affect the rate of a reaction,
 - How pollutants produced by humans negatively impacts the planet,
 - The Periodic table arrangement and the properties of group 1, group 7, group 0 and the transition metals,
 - Structure of the atom and how this links to the properties of the elements and their compounds,
 - Reversible reactions and dynamic equilibrium,
 - Extracting metals and the associated methods based on the metals position in the reactivity series.
- Develop practical skills such as using a Bunsen burner, handling and manipulating laboratory equipment, and performing chemical experiments safely.
- Demonstrate a secure understanding of how to interpret chemical data and reach valid conclusions linked to the chemistry that they have studied.
- Understand how the concepts studied in chemistry interlink with each other and other subjects.
- Communicate their understanding of chemistry verbally and in written format.
- Be prepared for KS5 Chemistry.

KS5

By the end of KS5 students should be able to:

- Demonstrate an advanced understanding of complex chemical concepts met during KS5 chemistry:
 - Organic chemistry met during their KS5 studies,
 - Organic chemistry reaction mechanisms including multistep processes,
 - Chemical synthesis and the associated techniques used in organic synthesis,
 - Isomers – how they are formed and named,
 - Polymers
 - Qualitative analysis
 - Energetics and associated cycles

- Atomic structure and how this gives rise to the properties of elements and compounds,
- Reaction kinetics and associated practical techniques,
- Equilibrium and associated calculations,
- Acids, bases and buffers and calculations,
- Transition elements and their complexes including ion detection based on colour formation,
- Redox and electrode potential and predicting the outcome of chemical reactions.
- Be able to analyse and evaluate complex chemical data and perform chemical calculations to reach valid conclusions.
- Retrieve and apply their understanding to organic synthesis problems including organic reaction mechanisms.
- Demonstrate advanced laboratory skills, including experimental design, data collection, recording and interpretation using a variety of equipment.
- Conduct independent research, gather data, and draw meaningful conclusions.
- Relate observable phenomena to underlying chemical concepts.
- Be independent learners.
- Be prepared for further education.

Diagnostic assessment methods

For all Key Stages:

Pop quizzes / retrieval at the start of the lesson to guide the learner to see what they can recall and what they need to develop further. This is also a valuable skill to identify areas that the class teacher needs to review again.

Formative assessment methods

KS3

- Starter quizzes to assess students understanding and identify concepts that need to be revisited.
- Cumulative assessments to assess prior understanding and to see if students can make links to new and old material.
- Homework programme which includes retrieval tasks and examination packs.

KS4

- Starter quizzes to assess students understanding and identify concepts that need to be revisited.
- Cumulative assessments to assess prior understanding and to see if students can make links to new and old material.
- Homework programme which includes retrieval tasks and examination packs are assessed by the students and check by the classroom teacher to identify gaps in knowledge and how to support the student further.

KS5

- Starter quizzes to assess students understanding and identify concepts that need to be revisited.
- Frequent cumulative assessments to assess prior understanding and to see if students can make links to new and old material.
- Frequent use of Microsoft forms to identify topics that need revisiting as well as guiding the students to reflect on their own learning journey and how they are going to move themselves forward.

Summative assessment

- All students receive an 'end of year examination' whereby they sit a formal assessment that is marked by a teacher within the chemistry department and then checked through internal standardisation.
- Follow up tasks are designed for each student to work on developing their understanding of chemistry as well as their examination technique.
- The mark scheme is shared with the students and modelled by the teacher. The students also have access to an annotated paper to help the students reflect on their understanding as well as how to approach further examination.
- GCSE examinations / A Level examinations

Marking and Feedback

- Quizzes at the start of the lesson are self-assessed however the teacher has an awareness of the pupils understanding through circulation and identifies areas that need to be explored further.
- The use of the starter activities is used to feedback into further activities that are carried out in subsequent lessons used by the teacher to check pupil understanding as well for pupils to check their own learning and whether it has moved forward.

KS3

- Cumulative assessments are marked by the student and then checked by the class teacher or by the class teacher. Answers are modelled by the class teacher to support the pupils understanding and examination technique.
- Homework following the homework program is checked by the teacher and following examination packs that the students' complete answers are modelled as required by the students.

KS4

- Cumulative assessments are marked by the class teacher and subsequently the class teacher models the answers to the pupils supporting the students approach to GCSE examination questions.
- Following some assessments follow up tasks are used for the students to select their own personalised actions to develop their understanding and examination technique further guided by their class teacher.

- Misconceptions and key areas that are found to be challenging by the pupils are addressed by the class teacher to support the pupils understanding further.

KS5

- Frequent cumulative assessments are teacher marked and the students then correct using either the direction of the class teacher or using an annotated paper giving tips on how to answer the question. Use of Microsoft forms following these assessments give further feedback to both the student and teacher on areas that the student needs to work on and areas that the teacher should readdress.
- Further activities are carried out following the performance in these cumulative assessments to develop student understanding further, help develop their examination technique as well as addressing misconceptions that exist.
- Following some assessments follow up tasks are used for the students to select their own personalised actions to develop their understanding and examination technique further, this is guided by their class teacher.

Marking and Feedback Codes

When providing written feedback in exercise books to ensure consistency across the school particularly for literacy the following codes should be used above the relevant word /section:

| | |
|-----|--|
| ✓ | good point |
| X | incorrect or wrong point |
| SP | spelling error which needs correction |
| P | punctuation error which needs correction |
| GR | grammatical error which needs correction |
| / | start a new sentence |
| // | start a new paragraph |
| ?? | the point is not clear |
| WW | wrong word |
| ^ | missing word |
| [] | this part needs rewording |
| +1 | academic achievement point |

Presentation

- All work should have a date on the right hand side, written in full and underlined with a ruler (e.g. 12th September 2023)
- All work will have a title / heading which is underlined with a ruler

- All work should have CW/HW written in the top left-hand
- Only black or blue ink should be used for writing with the exception of student responses to feedback
- All diagrams / graphs should be done in pencil.
- All work should be set out neatly.

Recording and Monitoring of Assessment

- Assessment data and homework data is recorded centrally on a spreadsheet giving feedback to the staff.
- Students complete MS forms following assessments asking for feedback on how they have performed. This is analysed by the class teacher and informs their practice.