

EYFS KS1 LKS2 UKS2

|  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Classifying** | Image result for working scientifically symbol | Image result for working scientifically symbol | Image result for working scientifically symbol | Image result for working scientifically symbol | Image result for working scientifically symbol | Image result for working scientifically symbol | Image result for working scientifically symbol | Image result for working scientifically symbol | Image result for working scientifically symbol | Image result for working scientifically symbol |
| **Ask scientific** | **To plan an** | **To observe** | **To take** | **To gather/record** | **To present** | **To interpret** | **To draw conclusions** | **To make a prediction** | **To evaluate an** |
| **questions** | **enquiry** | **closely** | **measurements** | **results** | **results** | **results** |  |  | **enquiry** |
| Show curiosity |  | Identify, sort and | To use | Record their | Talk about what |  | Children in EYFS are not expected to draw conclusions. They are expected to make observations which will help them to answer questions. They do not have the subject knowledge to give reasons for what they observe so they cannot draw scientific conclusions. | Children in EYFS are not expected to make scientific predictions as they do not have the subject knowledge to do this. That does not mean that you should not ask children what they think may happen, but this will be based on experience or may simply be a guess. | Children in EYFS are not expected to evaluate. However, children should be encouraged to consider their method and adapt this where necessary. |
| and ask | group. | equipment to | observations by | they are doing |
| questions |  | measure. | drawing, taking | and have found |
|  |  |  | photographs, | out. |
|  |  |  | using sorting rings |  |
|  |  |  | or boxes. |  |
|  |  |  | In reception on |  |
|  |  |  | simple tick sheets. |  |
| Be able to ask a Yes/No questions to aid sorting | Identify the headings for the two groups (it is …., it is not ….) | Be able to compare objects based on obvious, observable features e.g. size, shape, colour,  texture etc. |  |  | Sort objects and living things into two group using a basic Venn diagram  or simple table | Talk about the number of objects in each group i.e. which has more or less | Children in KS1 are not expected to draw conclusions. They are expected to make observations which will help them to answer questions. They do not have the  subject knowledge to give | Children in KS1 are not expected to make scientific predictions as they do not have the subject knowledge to do this. That does not mean that you should not ask  children what they think | Children in KS1 are not expected to evaluate. However, children should be encouraged to consider their method and adapt this where necessary. |
|  |  |  |  |  | reasons for what they | may happen, but this will |  |
|  |  |  |  |  | observe so they cannot | be based on experience |  |
|  |  |  |  |  | draw scientific conclusions. | or may simply be a guess. |  |
| Be able to ask a | Be able to put | Be able to compare |  |  | Sort objects and | Spot patterns in | Draw simple |  | Suggest |
| Yes/No | appropriate | objects based on | living things into | the data | conclusions, when | improvement e.g. a |
| questions to aid | headings onto | more sophisticated, | groups using | particularly two | appropriate, for patterns | wider range of |
| sorting | intersecting | observable | intersecting | criteria with no | e.g. a flying insect with | objects – only |
|  | Venn and | features. Present | Venn and | examples e.g. | no legs might always | looked at British |
|  | Carroll | observations in | Carroll diagrams | there are no | crash land | trees. Suggest new |
|  | diagrams | labelled diagrams |  | living things with |  | questions arising |
|  |  |  |  | wings and no |  | from the |
|  |  |  |  | legs |  | investigation. |
| Be able to ask a | Identify | Be able to compare |  |  | Create | Be able to talk | Be able to use data to |  | Be able to explain |
| range of Yes/No | specific clear | not only based on | branching | about the | show that livings things | using evidence that |
| questions to aid | questions that | physical properties | databases (tree | features that | and materials that are | the branching |
| sorting and | will help to sort | but also on | diagrams) and | objects and living | grouped together have | database or |
| decide which | without | knowledge gained | keys to enable | things share and | more things in common | classification key |
| ways of sorting | ambiguity | through previous | others to name | do not share | than with things in other | will only work for the |
| will give useful |  | enquiry. | livings things | based on the | groups | living things or |
| information |  |  | and objects | information in the |  | materials it was |
|  |  |  |  | key etc. |  | created for |

1



EYFS KS1 LKS2 UKS2

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| **Researching** | Image result for working scientifically symbol | Image result for working scientifically symbol | Image result for working scientifically symbol | Image result for working scientifically symbol | Image result for working scientifically symbol | Image result for working scientifically symbol | Image result for working scientifically symbol | Image result for working scientifically symbol | Image result for working scientifically symbol | Image result for working scientifically symbol |
| **Ask** | **To plan an** | **To observe** | **To take** | **To gather/record** | **To present results** | **To interpret results** | **To draw** | **To make a** | **To evaluate an** |
| **scientific** | **enquiry** | **closely** | **measurements** | **results** |  |  | **conclusions** | **prediction** | **enquiry** |
| **questions** |  |  |  |  |  |  |  |  |  |
| Show curiosity and ask questions |  |  | To use equipment to measure. |  | Talk about what they are doing and have found out. |  | Children in EYFS are not expected to draw conclusions. They are expected to make  observations which will | Children in EYFS are not expected to make scientific predictions as they do not have the  subject knowledge to do | Children in EYFS are not expected to evaluate. However, children should be  encouraged to |
|  |  |  | help them to answer | this. That does not mean | consider their method |
|  |  |  | questions. They do not | that you should not ask | and adapt this where |
|  |  |  | have the subject | children what they think | necessary. |
|  |  |  | knowledge to give | may happen, but this will |  |
|  |  |  | reasons for what they | be based on experience |  |
|  |  |  | observe so they | or may simply be a |  |
|  |  |  | cannot draw scientific | guess. |  |
|  |  |  | conclusions. |  |  |
| Ask one or |  |  |  |  | Present what they have learnt | Be able to answer | Children in KS1 are | Children in KS1 are | Children in KS1 |
| two simple | verbally or using pictures | their questions using | not expected to | not expected to make | are not expected to |
| questions |  | simple sentences | draw conclusions. | scientific predictions | evaluate. However, |
| linked to a |  |  | They are expected | as they do not have | children should be |
| topic |  |  | to make | the subject knowledge | encouraged to |
|  |  |  | observations which | to do this. That does | consider their |
|  |  |  | will help them to | not mean that you | method and adapt |
|  |  |  | answer questions. | should not ask | this where |
|  |  |  | They do not have | children what they | necessary. |
|  |  |  | the subject | think may happen, but |  |
|  |  |  | knowledge to give | this will be based on |  |
|  |  |  | reasons for what | experience or may |  |
|  |  |  | they observe so | simply be a guess. |  |
|  |  |  | they cannot draw |  |  |
|  |  |  | scientific |  |  |
|  |  |  | conclusions. |  |  |
| Ask a range | Choose a |  |  |  | Present what they learnt | Be able to answer |  |  | Suggest limitations |
| of questions | source from a | verbally or using labelled | their questions using | e.g. only had one |
| linked to a | range | diagrams | simple scientific | book. Suggest new |
| topic | provided |  | language | questions arising |
|  |  |  |  | from the |
|  |  |  |  | investigation. |
| Ask a range | Choose a |  |  |  | Present what they learnt in a | Be able to answer |  |  | Be able to talk about their degree of trust in the sources they used |
| of questions | source from a | range of ways e.g. different | their questions using |
| linked to a | range | graphic organisers | scientific evidence |
| topic | provided |  | gained from a range |
|  |  |  | of sources |



EYFS KS1 LKS2 UKS2

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| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Comparative/fair testing** | Image result for working scientifically symbol | Image result for working scientifically symbol | Image result for working scientifically symbol | Image result for working scientifically symbol | Image result for working scientifically symbol | Image result for working scientifically symbol | Image result for working scientifically symbol | Image result for working scientifically symbol | Image result for working scientifically symbol | Image result for working scientifically symbol |
| **Ask scientific questions** | **To plan an enquiry** | **To observe closely** | **To take measurements** | **To gather/record results** | **To present results** | **To interpret results** | **To draw conclusions** | **To make a prediction** | **To evaluate an enquiry** |
| Show curiosity and ask questions |  | To make direct comparisons | To use equipment to measure. |  | Talk about what they are doing and have found out. |  | Children in EYFS are not expected to draw conclusions. They are expected to make observations which will help them to answer questions. They do not have the subject knowledge to give reasons for what they observe so they cannot draw scientific conclusions. | Children in EYFS are not expected to make scientific predictions as they do not have the subject knowledge to do this. That does not mean that you should not ask children what they think may happen, but this will be based on experience or may simply be a guess. | Children in EYFS are not expected to evaluate. However, children should be encouraged to consider their method and adapt this where necessary. |
| Identify the question to investigate from a scenario or choose a question from a range provided | Choose equipment to use and decide what to do and what to observe or measure in order to answer the question | Make observations linked to answering the question | When appropriate, measure using standard units where all the numbers are marked on the scale | Record data in simple prepared tables, pictorially or by taking photographs | Present what they learnt verbally, using pictures or block diagrams | Answer their question in simple sentences using their observations or measurements | Children in KS1 are not expected to draw conclusions. They are expected to make observations which will help them to answer questions. They do not have the subject knowledge to give reasons for what they observe so they cannot draw scientific conclusions. | Children in KS1 are not expected to make scientific predictions as they do not have the subject knowledge to do this. That does not mean that you should not ask children what they think may happen, but this will be based on experience or may simply be a guess. | Children in KS1 are not expected to evaluate. However, children should be encouraged to consider their method and adapt this where necessary. |
| Ask a range of questions linked to a topic | Decide what to change and what to measure or observe | As for KS1 | Measure using standard units where not all the numbers are marked on the scale, and take repeat readings where necessary | Prepare own tables to record data | Present data in bar charts | Refer directly to their evidence when answering their question | Where appropriate provide oral or written explanations for their findings | Use results from an investigation to make a prediction about a further result | Suggest improvements e.g. to method of taking measurements.  Suggest new questions arising from the investigation. |
| Ask a range of questions & identify the type of enquiry that will help to answer the questions. Ask further questions based on results. | Recognise and control variables where necessary | As for KS1 | Measure using standard units using equipment that has scales involving decimals | Prepare own tables to record data, including columns for taking repeat readings | Choose an appropriate form of presentation, including line graphs | Be able to answer their question, describing causal relationships | Provide oral or written explanations for their findings | Use test results to make predictions for further investigations | Explain their degree of trust in their results e.g. precision in taking measurements, variables that may not have been controlled, and accuracy of results |



EYFS KS1 LKS2 UKS2

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| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Observing over time** | Image result for working scientifically symbol | Image result for working scientifically symbol | Image result for working scientifically symbol | Image result for working scientifically symbol | Image result for working scientifically symbol | Image result for working scientifically symbol | Image result for working scientifically symbol | Image result for working scientifically symbol | Image result for working scientifically symbol | Image result for working scientifically symbol |
| **Ask scientific questions** | **To plan an enquiry** | **To observe closely** | **To take measurements** | **To gather/record results** | **To present results** | **To interpret results** | **To draw conclusions** | **To make a prediction** | **To evaluate an enquiry** |
| Show curiosity and ask questions |  | Make observations using their senses and simple equipment. | To use equipment to measure. |  | Talk about what they are doing and have found out.  To use their observations to help them answer their questions. |  | Children in EYFS are not expected to draw conclusions. They are expected to make observations which will help them to answer questions. They do not have the subject knowledge to give reasons for what they observe so they cannot draw scientific conclusions. | Children in EYFS are not expected to make scientific predictions as they do not have the subject knowledge to do this. That does not mean that you should not ask children what they think may happen, but this will be based on experience or may simply be a guess. | Children in EYFS are not expected to evaluate.  However, children should be encouraged to consider their method and adapt this where necessary. |
| Ask a question about what might happen in the future based on an observation | Choose equipment to use and decide what to do and what to observe or measure in order to answer the question | Make observations linked to answering the question | When appropriate, measure using standard units where all the numbers are marked on the scale | Record data in simple prepared tables, pictorially or by taking photographs | Present what they learnt verbally, using pictures or block diagrams | Answer their question in simple sentences using their observations or measurements | Children in KS1 are not expected to draw conclusions. They are expected to make observations which will help them to answer questions. They do not have the subject knowledge to give reasons for what they observe so they cannot draw scientific conclusions. | Children in KS1 are not expected to make scientific predictions as they do not have the subject knowledge to do this. That does not mean that you should not ask children what they think may happen, but this will be based on experience or may simply be a guess. | Children in KS1 are not expected to evaluate. However, children should be encouraged to consider their method and adapt this where necessary. |
| Ask a range of questions linked to a topic | Decide what to measure or observe.  Decide how often to take a measurement. | Make a range of relevant observations | Measure using standard units where not all the numbers are marked on the scale. Use data loggers to measure over time. | Prepare own tables to record data | Present data in time graphs | Refer directly to their evidence when answering their question | Where appropriate provide oral or written explanations for their findings | Use results from an investigation to make a prediction about a further result | Suggest improvements  e.g. to method of taking measurements. Suggest new questions arising from the investigation. |
| Ask a range of questions and identify the type of enquiry that will help to answer the questions. Ask further questions based on results. | Recognise and control variables where necessary | As for KS1 | Measure using standard units using equipment that has scales involving decimals | As for LKS2 | Choose an appropriate form of presentation, including line graphs | Be able to answer their questions, describing the change over time | Provide oral or written explanations for their findings | Use test results to make predictions for further investigations | Explain their degree of trust in their results e.g. precision in taking measurements, variables that may not have been controlled, and accuracy of results |



EYFS KS1 LKS2 UKS2

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| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Pattern Seeking** | Image result for working scientifically symbol | Image result for working scientifically symbol | Image result for working scientifically symbol | Image result for working scientifically symbol | Image result for working scientifically symbol | Image result for working scientifically symbol | Image result for working scientifically symbol | Image result for working scientifically symbol | Image result for working scientifically symbol | Image result for working scientifically symbol |
| **Ask scientific questions** | **To plan an** | **To observe** | **To take** | **To** | **To present results** | **To interpret** | **To draw conclusions** | **To make a prediction** | **To evaluate an** |
|  | **enquiry** | **closely** | **measurements** | **gather/record** |  | **results** |  |  | **enquiry** |
|  |  |  |  | **results** |  |  |  |  |  |
| Show curiosity and ask questions |  |  |  |  | Talk about what they are doing and have found out. |  | Children in EYFS are not expected to draw conclusions. They are expected to make  observations which will help | Children in EYFS are not expected to make scientific predictions as they do not  have the subject knowledge to | Children in EYFS are not expected to evaluate.  However, children should be encouraged to |
|  |  | them to answer questions. | do this. That does not mean | consider their method |
|  |  | They do not have the subject | that you should not ask | and adapt this where |
|  |  | knowledge to give reasons for | children what they think may | necessary. |
|  |  | what they observe so they | happen, but this will be based |  |
|  |  | cannot draw scientific | on experience or may simply |  |
|  |  | conclusions. | be a guess. |  |
| Ask a question that is  looking for a pattern based on observations | Choose  equipment to use and | Make  observations linked to | When  appropriate, measure using | Record data in  simple, prepared | Present what they learnt verbally | Answer their  question in simple sentences | Children in KS1 are not expected to draw conclusions. They are expected to make observations which will help them to answer questions.  They do not have the subject knowledge to give reasons for what they observe so they cannot draw scientific conclusions. | Children in KS1 are not expected to make scientific predictions as they do not have the subject knowledge to do this. That does not mean that you should not ask children what they think may happen, but this will be based on experience or may simply be a guess. | Children in KS1 are not expected to evaluate. However, children should  be encouraged to |
|  | decide what to do and  what to | answering the question | standard units where all the  numbers are | tables and tally charts |  | using their observations or  measurements | consider their method  and adapt this where necessary. |
|  | observe or |  | marked on the |  |  |  |  |
|  | measure in |  | scale |  |  |  |  |
|  | order to |  |  |  |  |  |  |
|  | answer the |  |  |  |  |  |  |
|  | question |  |  |  |  |  |  |
| Ask a range of questions | Decide what | As for KS1 | Measure using | Prepare own | Use ICT package to | Refer directly to | Where appropriate | Use results from an | Suggest |
| linked to a topic | to measure or |  | standard units | tables to | present data as a | their evidence | provide oral or written | investigation to make a | improvements e.g. |
|  | observe |  | where not all the | record data | scatter gram | when answering | explanations for their | prediction about a | to method of |
|  |  |  | numbers are |  |  | their question | findings | further result | taking |
|  |  |  | marked on the |  |  |  |  |  | measurements. |
|  |  |  | scale. |  |  |  |  |  | Suggest new |
|  |  |  |  |  |  |  |  |  | questions arising |
|  |  |  |  |  |  |  |  |  | from the |
|  |  |  |  |  |  |  |  |  | investigation. |
| Ask a range of questions | Recognise | As for KS1 | Measure using | As for LKS2 | Choose an | Be able to | Provide oral or written | Use test results to | Explain their |
| and identify the type of | and control |  | standard units |  | appropriate form of | answer their | explanations for their | make predictions for | degree of trust in |
| enquiry that will help to | variables |  | using equipment |  | presentation, | questions | findings | further investigations | their results e.g. |
| answer the questions. Ask | where |  | that has scales |  | including scatter | identifying |  |  | precision in taking |
| further questions based on | necessary |  | involving |  | graphs | patterns |  |  | measurements, |
| results. |  |  | decimals |  |  |  |  |  | variables that may |
|  |  |  |  |  |  |  |  |  | not have been |
|  |  |  |  |  |  |  |  |  | controlled, and |
|  |  |  |  |  |  |  |  |  | accuracy of results |