Spelling Rule Algorithm   Letter Q

Module Aim

An activity to reinforce spelling rules using computing science concepts. This could be used as a homework activity or as an alternative strategy within a literacy lesson. Pupils convert a spelling rule into a flowchart algorithm or use a flowchart algorithm to work out which spelling to use.

Time to complete each activity
10-15 minutes

Literacy Aims

Further pupils understanding of the spelling rules

Computer Science Concepts

An algorithm is a step by step list of instructions or rules to accomplish something

Rules are easy things to convert into algorithms

Conditional Selection in a flow chart algorithm is represented as a decision diamond

National Curriculum Programs of Study

Pupils should be taught to:

- design, write and debug programs that accomplish specific goals, including controlling or simulating physical systems; solve problems by decomposing them into smaller parts

- use sequence, selection, and repetition in programs; work with variables and various forms of input and output

- **use logical reasoning to explain how some simple algorithms work and to detect and correct errors in algorithms** and programs

Converting Algorithm to Code

All of these algorithms can be converted into code using a programming language, such as Python, that works well with string manipulation. For primary pupils these are best left as algorithms.

Variety

Some rules have more than one activities so you may match them to pupils abilities or your time needs.

Page 2

Pupils have to part complete the flowchart before testing it with q words.

Page 3

Pupils only need to use the flowchart to test the words.

Page 4

Answer Sheet

Letter Q

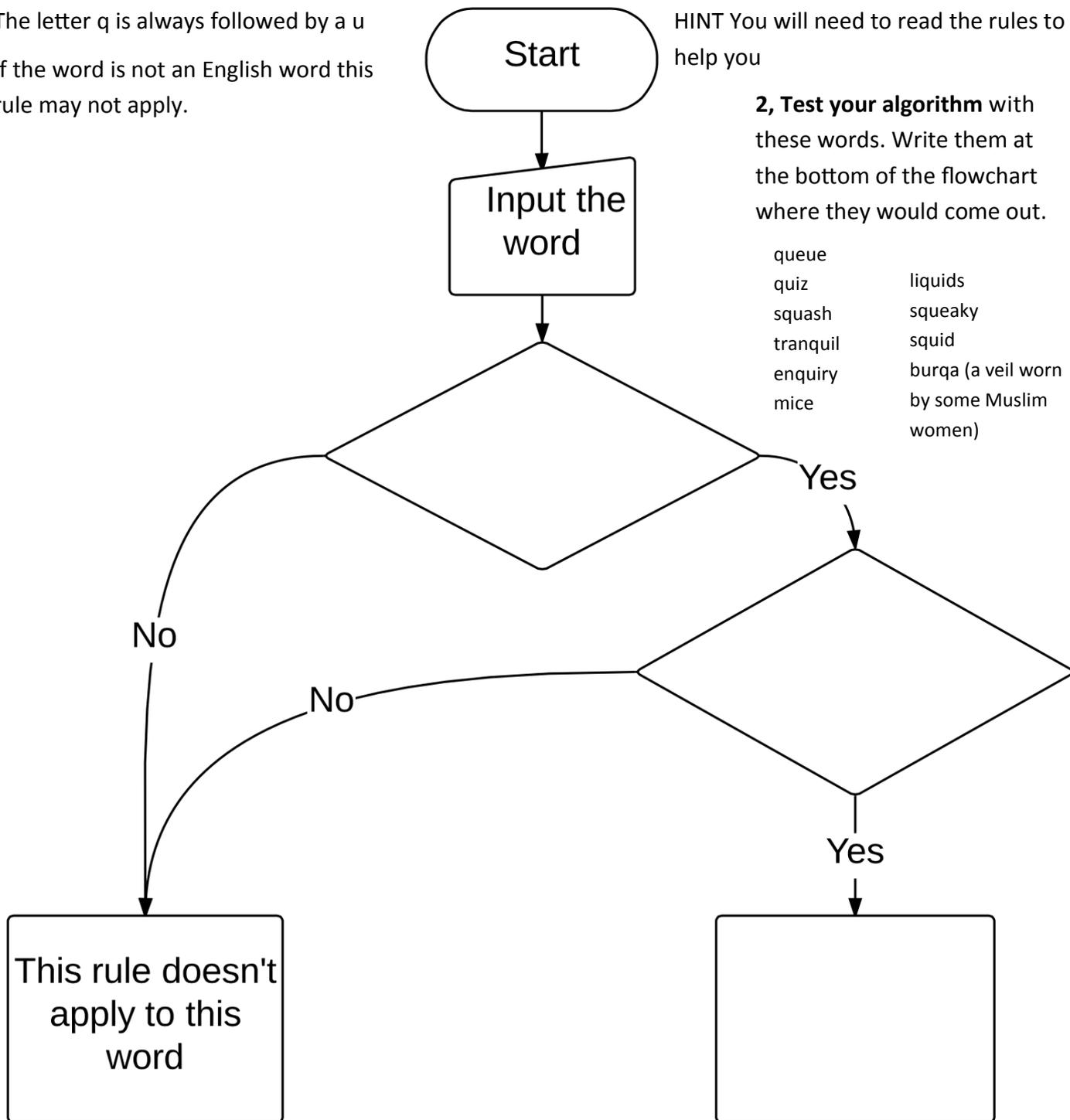Junior **Computer Science** code-it.co.uk

Rules

The letter q is always followed by a u

If the word is not an English word this rule may not apply.

1, Complete the flowchart Algorithm
HINT You will need to read the rules to help you

2, Test your algorithm with these words. Write them at the bottom of the flowchart where they would come out.

queue
quiz
squash
tranquil
enquiry
mice

liquids
squeaky
squid
burqa (a veil worn by some Muslim women)

```
        ( Start )
            |
      [ Input the word ]
            |
          < >
      No /   \ Yes
        /      \
       /        < >
      /     No /   \ Yes
     /        /      \
[This rule    /   [            ]
 doesn't    /
 apply to
 this word]
```

Yes

No

Yes

This rule doesn't apply to this word

Letter Q

Rules

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1, Test the algorithm with these words. Write them at the bottom of the flowchart where they would come out.

queue
quiz
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tranquil
enquiry
liquids
squeaky
squid
mice
burqa (a veil worn by some Muslim women)

Start

Input the word

Does the word have a 'q' in it?

No

Yes

Is the word an English word.

No

Yes

This rule doesn't apply to this word

Add a 'u' directly after the 'q'
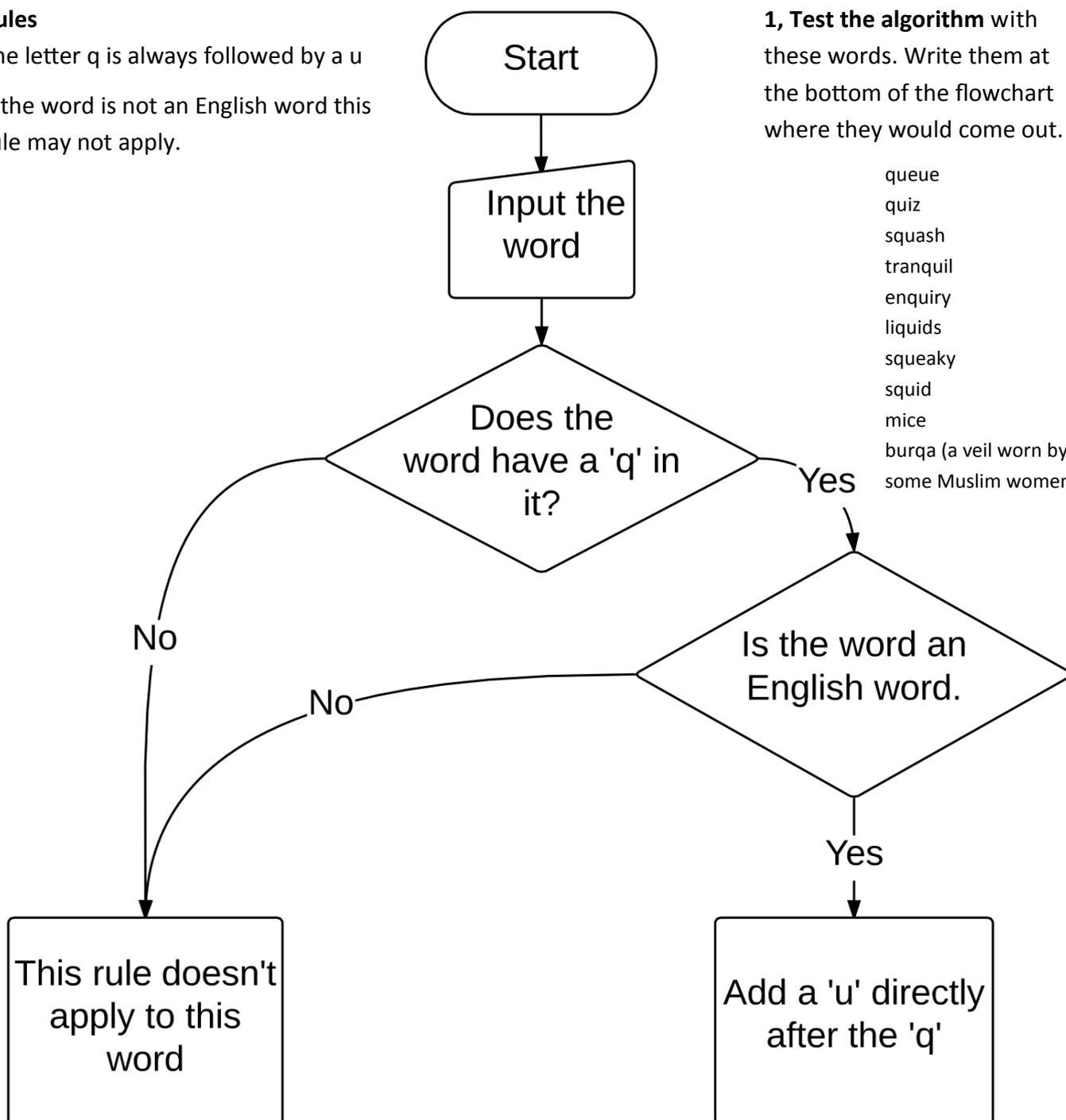
Letter Q

Answers Sheet

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mice
burqa (a veil worn by some Muslim women)

```
            Start
              ↓
        Input the
          word
              ↓
       Does the        Yes
    word have a 'q' in  ───────┐
          it?                  │
       ↓                       ↓
      No              Is the word an
                      English word.
              No              ↓
                             Yes
                              ↓
   This rule doesn't    Add a 'u' directly
    apply to this         after the 'q'
        word
```

NOTE The decision diamonds could be reversed

mice
burqa

Queue, quiz, squash, tranquil, enquiry, liquids squeaky, squid