

Charlotte's Web

Desirable Features: Exploring Programming

Task Description

In this task pupils should use Black Cat Logo to help an on-screen spider (Charlotte). It is designed to be completed using the Blue Level of BlackCat Logo.

This task is set out in three parts. For level 4, pupils must complete part 1(a) and 1(b). Pupils are required to write one sequence of commands to guide Charlotte to catch the flies in her web. They are then required to help her to begin to build a web in Part 1(b)

For level 5 pupils must complete Part 1b and Part 2. They are required to devise and build up a succession of Logo Procedures to create a new web for Charlotte, making use of the tools available within the programme.

This task also provides teachers with the opportunity to develop pupils' skills in numeracy (Using Maths). It would also be an ideal activity to use if the class had been reading Charlotte's Web.

Explore

- access, select, interpret and research information from safe and reliable sources;
- **investigate, make predictions and solve problems through interaction with digital tools.**

Express

- create, develop, present and publish ideas and information responsibly using a range of digital media and manipulate a range of assets to produce multimedia products.

Exchange

- communicate safely and responsibly using a range of contemporary digital methods and tools, exchanging, sharing, collaborating and developing ideas digitally.

Evaluate

- **talk about, review and make improvements to work, reflecting on the process and outcome and consider the sources and resources used, including safety, reliability and acceptability.**

Exhibit

- **manage and present their stored work and showcase their learning across the curriculum, using ICT safely and responsibly.**

The Arts	
Language and Literacy	
Mathematics and Numeracy	✓
Personal Development and Mutual Understanding	
Physical Education	
The World Around Us	

Please Note: For assessment purposes, only the 'E's that are covered at the level(s) stated on the task have been bolded.

Depending on how the task is approached, it may touch on elements of the unbolded 'E's, although not necessarily at the level(s) stated.

Charlotte's Web

Thinking Skills and Personal Capabilities

This assessment task also provides pupils with the opportunity to develop and demonstrate aspects of Thinking Skills and Personal Capabilities.

Managing Information

Thinking, Problem-Solving and Decision-Making

Being Creative

Working with Others

Self-Management.

Prior Knowledge/Experience

Depending on the level at which they are working, pupils should have some experience in some of the following:

- knowledge of regular 2D shapes and their angle properties;
- using Black Cat Logo ;
- using repeat commands to draw patterns/shapes;
- designing and naming simple procedures to draw patterns/shapes; and
- saving and printing work.

Resources

Suitable software – Black Cat Logo.

Pupil notes.

Charlottessweb.jpg File – can be downloaded from the CCEA ICT Accreditation Microsite.

Scratch – This task can now be used with scratch. See Pupil Notes Charlotte's Web (Using Scratch).

Managing the Task

Part 1

- Before the children begin the task the teacher must download the Charlottessweb.jpg from the Task List area of the CCEA website into a folder within the Public Folder. (A help sheet is available on CCEA website).
- It is vital that the pupils write a sequence of instructions, only pressing the enter key at the end of the entire **sequence**, then observing the effect of running the sequence.

Pupils should be given opportunities to:

Plan

Using the Pupil Notes as a stimulus, pupils should plan and write commands to catch the flies and make a simple procedure (L4) or plan and write a succession of procedures to make Charlotte's Web (L5).

Do

Pupils should work individually to test out the commands. They should save and print their work.

Review

Pupils should be given the opportunity to discuss the outcome with their peers. They should reflect on the process and make any improvements if required.

Assessing Pupils' Responses to the Task

The first column of the Assessment Criteria Grid sets, in bold, the Requirements for UICT that are covered in this task. Alongside this are the Levels of Progression (those related to the task are in bold) and the UICT Desirable Features for Exploring Programming at Levels 4 and 5. These Desirable Features have been produced as guidance for teachers to consider when observing a pupil and assigning a level to a piece of work. When coming to a holistic judgement of the pupil's level of

UICT competence, teachers should ensure that these Desirable Features are used in conjunction with the UICT Levels of Progression.

This task may provide opportunities for pupils to work collaboratively online (Exchange) and showcase work online (Exhibit). Teachers should include these, where possible, as set out in the Desirable Features.

Assessment Criteria Grid		
UICT Requirements	Level 4	Level 5
Explore <ul style="list-style-type: none"> access, select, interpret and research information from safe and reliable sources; investigate, make predictions and solve problems through interaction with digital tools. 	Pupils can: <ul style="list-style-type: none"> research, select, edit and use assets from a range of digital sources (explore); investigate and solve problems in a digital environment (explore); 	Pupils can: <ul style="list-style-type: none"> research, select, edit, use and evaluate assets from a range of digital sources (explore); investigate and solve problems in a range of digital environments (explore);
Express <ul style="list-style-type: none"> create, develop, present and publish ideas and information responsibly using a range of digital media and manipulate a range of assets to produce multimedia products. 	<ul style="list-style-type: none"> process found or self-produced assets, including text, data, sound, still or moving images, and combine these to create, present and communicate their work, showing an awareness of audience and purpose (express); 	<ul style="list-style-type: none"> process found and self-produced assets, integrating text, data, sound, still and moving images to create, present and communicate their work, demonstrating a clear understanding of audience and purpose (express);
Exchange <ul style="list-style-type: none"> communicate safely and responsibly using a range of contemporary digital methods and tools, exchanging, sharing, collaborating and developing ideas digitally. 	<ul style="list-style-type: none"> use contemporary digital methods to communicate, exchange and participate in a range of supervised online activities (exchange); 	<ul style="list-style-type: none"> use a range of contemporary digital methods to communicate, exchange and share their work collaborating online with peers (exchange);
Evaluate <ul style="list-style-type: none"> talk about, review and make improvements to work, reflecting on the process and outcome and consider the sources and resources used, including safety, reliability and acceptability. 	<ul style="list-style-type: none"> use appropriate ICT tools and features to improve work (evaluate); and 	<ul style="list-style-type: none"> use appropriate ICT tools and features to carry out ongoing improvements and reflect on process and outcome (evaluate); and
Exhibit <ul style="list-style-type: none"> manage and present their stored work and showcase their learning across the curriculum, using ICT safely and responsibly. 	<ul style="list-style-type: none"> select, organise, store and retrieve their work to showcase learning digitally in a personalised area (exhibit). 	<ul style="list-style-type: none"> organise, store and maintain their work within a personalised area to showcase learning across the curriculum (exhibit).

Assessment Criteria Grid

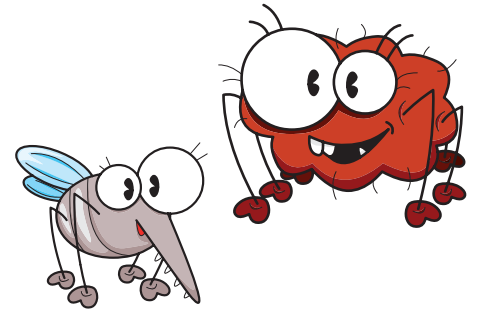
UICT Requirements	Desirable Features - Level 4 (Exploring Programming)	Desirable Features - Level 5 (Exploring Programming)
<p>Explore</p> <ul style="list-style-type: none"> access, select, interpret and research information from safe and reliable sources; investigate, make predictions and solve problems through interaction with digital tools. 	<p>Typically the pupil can:</p> <ul style="list-style-type: none"> input more complex sequences of commands (explore); build and edit simple procedures (explore); work collaboratively online, for example, using Scratch, download a project and edit it (exchange); discuss how they could improve their commands and procedures and make any necessary modifications (evaluate); and showcase work by uploading to a pre-prepared class e-portfolio. 	<p>Typically the pupil can:</p> <ul style="list-style-type: none"> build and edit more complex procedures to solve a problem (explore); group sequences of procedures together (explore); work collaboratively online, for example, using Scratch, download a project it, edit it and then share this with others online (exchange); consider the output of the procedures and use trial and error to refine these as needed (evaluate) reflect on what might they could do to make procedures most efficient (evaluate); and showcase work, in Scratch, by uploading the project (exhibit).
<p>Express</p> <ul style="list-style-type: none"> create, develop, present and publish ideas and information responsibly using a range of digital media and manipulate a range of assets to produce multimedia products. 		
<p>Exchange</p> <ul style="list-style-type: none"> communicate safely and responsibly using a range of contemporary digital methods and tools, exchanging, sharing, collaborating and developing ideas digitally. 		
<p>Evaluate</p> <ul style="list-style-type: none"> talk about, review and make improvements to work, reflecting on the process and outcome and consider the sources and resources used, including safety, reliability and acceptability. 		
<p>Exhibit</p> <ul style="list-style-type: none"> manage and present their stored work and showcase their learning across the curriculum, using ICT safely and responsibly. 		

Pupils should demonstrate, when and where appropriate, knowledge and understanding of e-safety including acceptable online behaviour.

Charlotte's Web

Part 1 (a)

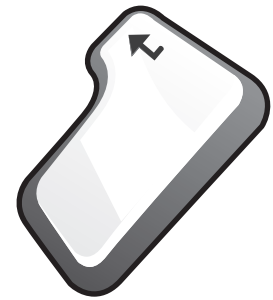
Charlotte the spider needs your help. She is very tired and hungry and needs you to help her to catch some flies which have been caught in her web.



Open Black Cat Logo at the Blue Level.
In the Command Window type: **sethome**
(leave space) **367** (leave space) **258** then
press the Enter/Return key.

In the Command Window type 'home' and
press the Enter/Return key.

Then in the command window type **cs** and
press the Enter/Return key, this will clear
the screen and set the turtle to the correct
position.



Go to the Choose Background icon and select
Browse. Browse to the Public Folder where
your teacher has saved the Charlottes web
background and open it.

Now go to the Choose a turtle icon and select
the spider.

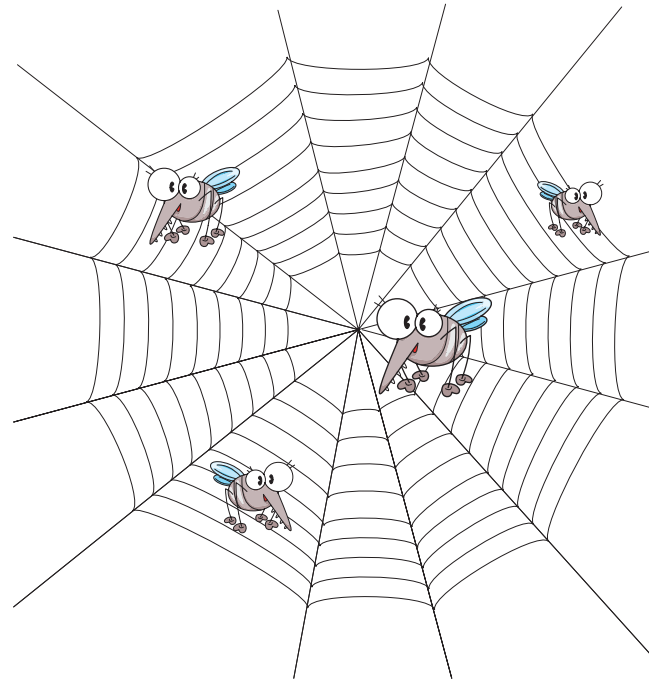
Choose a colour (not black or white) for
Charlotte's trail.



Charlotte's Web

Part 1(a) ctd

Charlotte is sitting in the middle of her web. The web is made up of equilateral triangles. Small triangles have a side length of 75, medium triangles have a side length of 150 and large triangles have the side length of 225. Four flies have got caught in the web.



You have to move Charlotte along the threads of the web to each of the flies and back to the middle of the web. You can use the pen to see her path.

Spend some time working out and testing the commands to take Charlotte to each fly and back to the centre. When you have got it right you should enter **all** the commands and press Enter. This will run your entire sequence so that you can see if it works.



If Charlotte catches the flies and gets back to the centre without coming off the threads then the sequence is correct and you can print out your work. If it does not work then click the Undo button or the Home button and try again.

Change to Red Level, go to Options - Speed and select Slow then go to Save As to save your web into your documents folder.



Open your file and show it to someone in your class and discuss if or how you could have made it better.

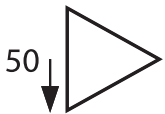
Charlotte's Web

Part 1(b)

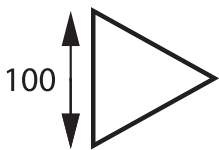
Charlotte's web has been broken and she is going to spin a new one. She is very tired so she needs your help: You are going to help her to build a new web:

Open Black Cat Logo at the Blue Level.

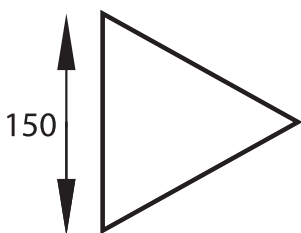
Write a procedure to draw a small equilateral triangle of side length 75. You may use any colour and pen width. Call your procedure **smalltri**. Your triangle should look like this:



Write a procedure to draw a medium equilateral triangle, side length 150. Call this procedure **medtri**. Your triangle should look like this:



Write a procedure to draw a large equilateral triangle, side length 225. Call this procedure **bigtri**. Your triangle should look like this:

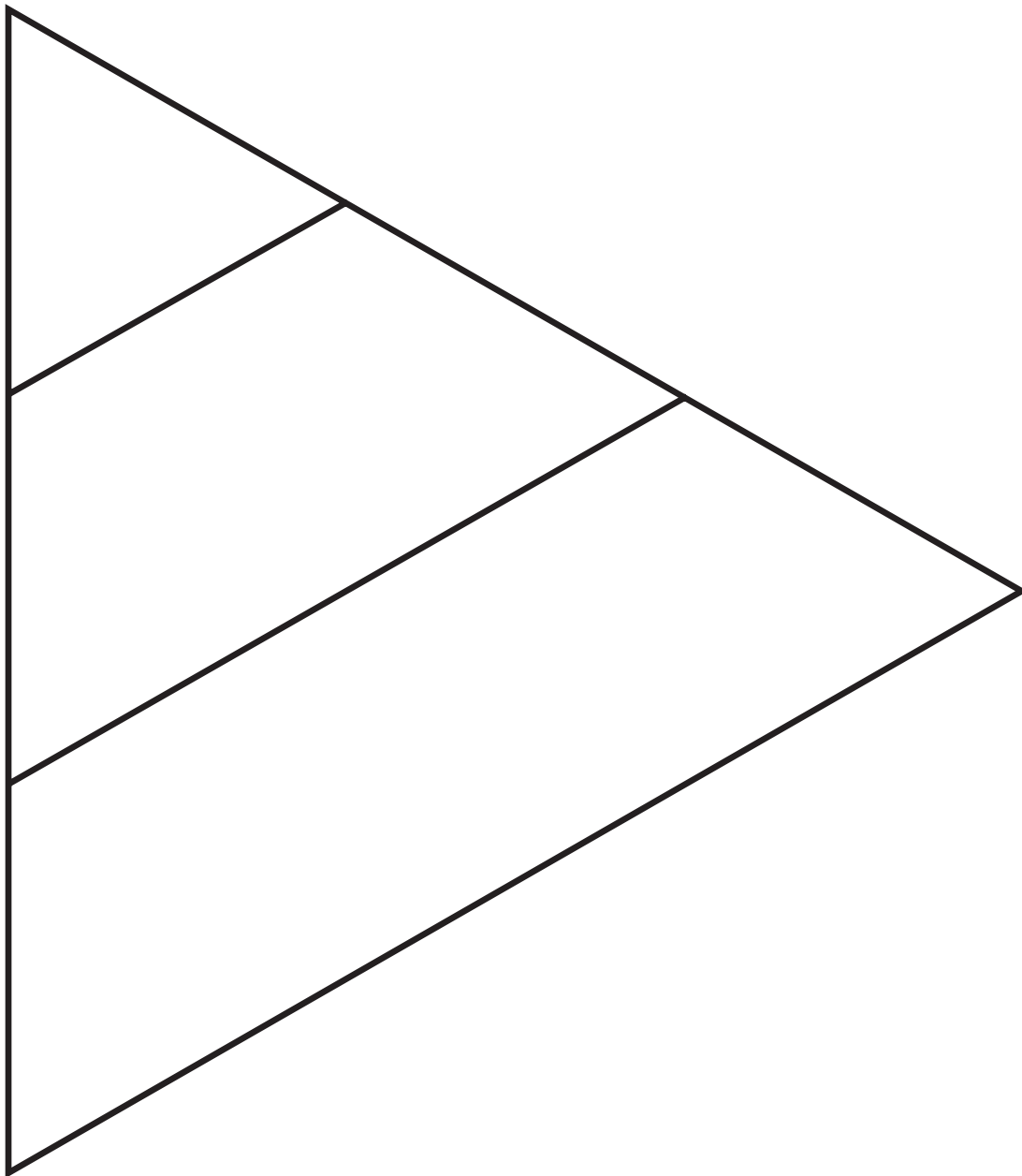


You have begun to help Charlotte. Discuss with a partner how you made your procedure. Save your file.

Charlotte's Web

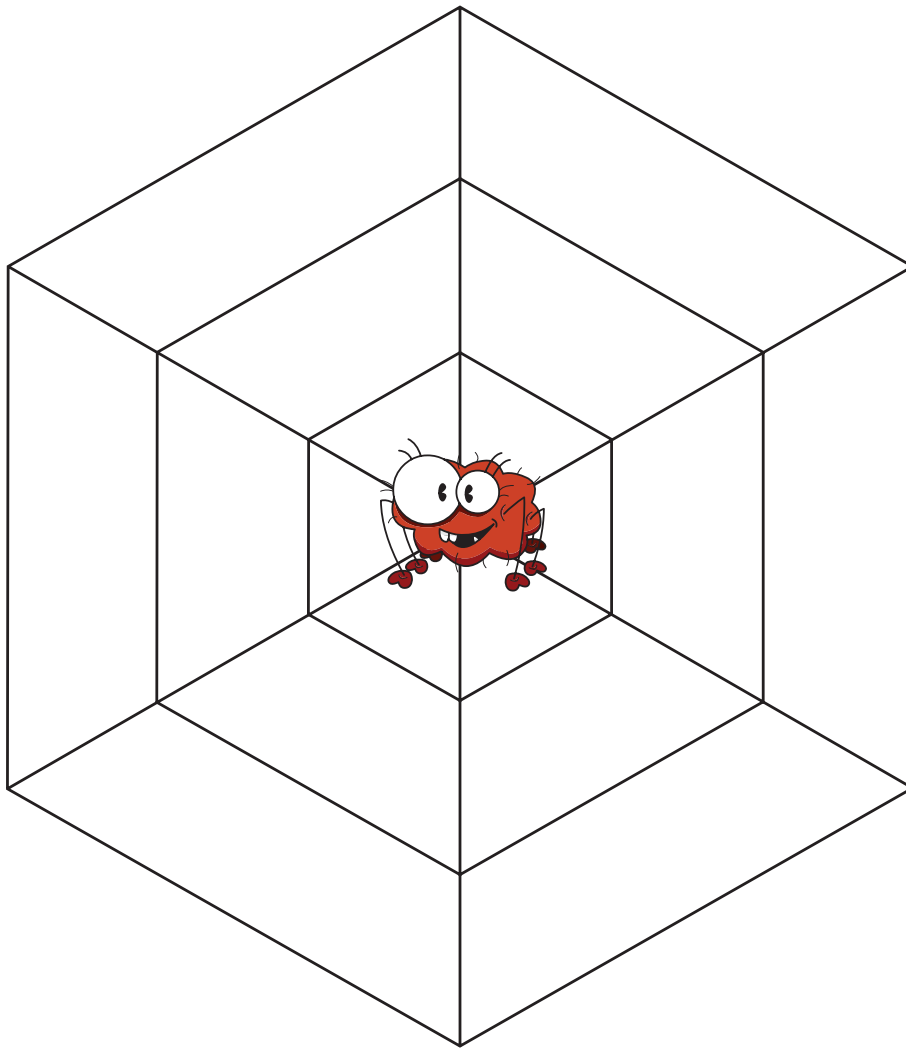
Part 2 To continue making the web:

Write a new procedure embedding `smalltri`, `medtri` and `bigtri` called `websegment`, which draws this shape:



Charlotte's Web

Use **websegment** to write a procedure called **Web** which draws the complete web.

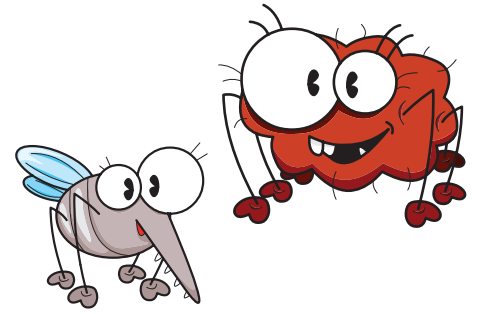


Change to Red Level, go to Options - Speed and select Slow then go to Save As to save your web into your documents folder.

Open your file and show your web to someone in your class. Discuss how you made your procedures. Write an account of how you carried out the task and the problems you faced.

Charlotte's Web

(using Scratch)



Part 1

Charlotte the spider needs your help. She is very tired and hungry and needs you to help her to catch some flies which have been caught in her web.

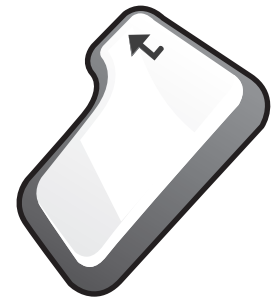
Open the Scratch file you have been given.

Choose a colour (not black or white) for Charlotte's trail.

Use the pen to leave a trail for Charlotte.

Charlotte is sitting in the middle of her web. The web is made up of equilateral triangles. Small triangles have a side length of 50, medium triangles have a side length of 100 and large triangles have the side length of 150. Four flies have got caught in the web.

You have to move Charlotte along the threads of the web to each of the flies and back to the middle of the web. You can use the pen to see her path.

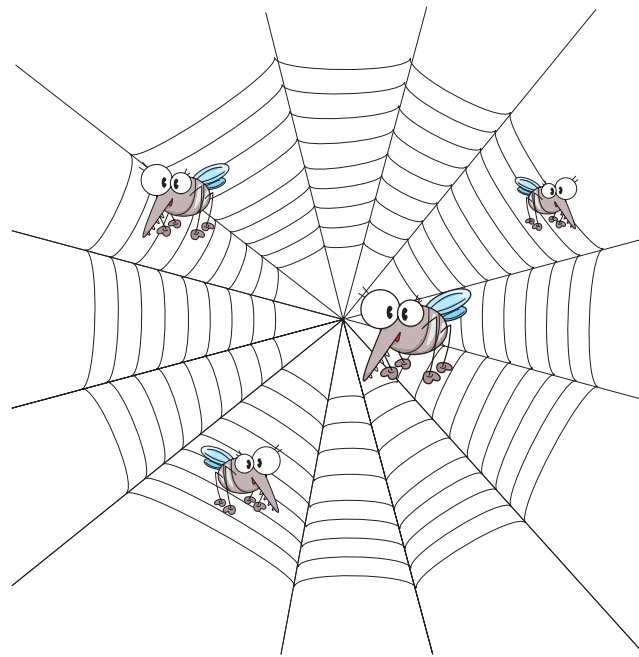


Charlotte's Web

Spend some time working out and testing the commands to take Charlotte to each fly and back to the centre. When you have got it right you should click the green flag to run your entire sequence so that you can see if it works.

If Charlotte catches the flies and gets back to the centre without coming off the threads then the sequence is correct and you can save your work. If it does not work then try again. When you have completed the task go to File - Save As and give your saved file an appropriate name.

Open your file and show it to someone in your class and discuss if or how you could have made it better.



Charlotte's Web

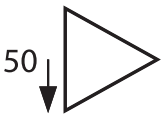
(using Scratch)

Part 1 (b)

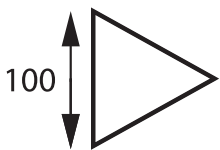
Charlotte's web has been broken and she is going to spin a new one. She is very tired so she needs your help:

Open Scratch.

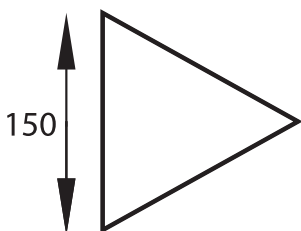
Write a procedure to draw a small equilateral triangle of side length 50. You may use any colour and pen width. Call your procedure **smalltri**. Your triangle should look like this:



Write a procedure to draw a medium equilateral triangle, side length 100. Call this procedure **medtri**. Your triangle should look like this:



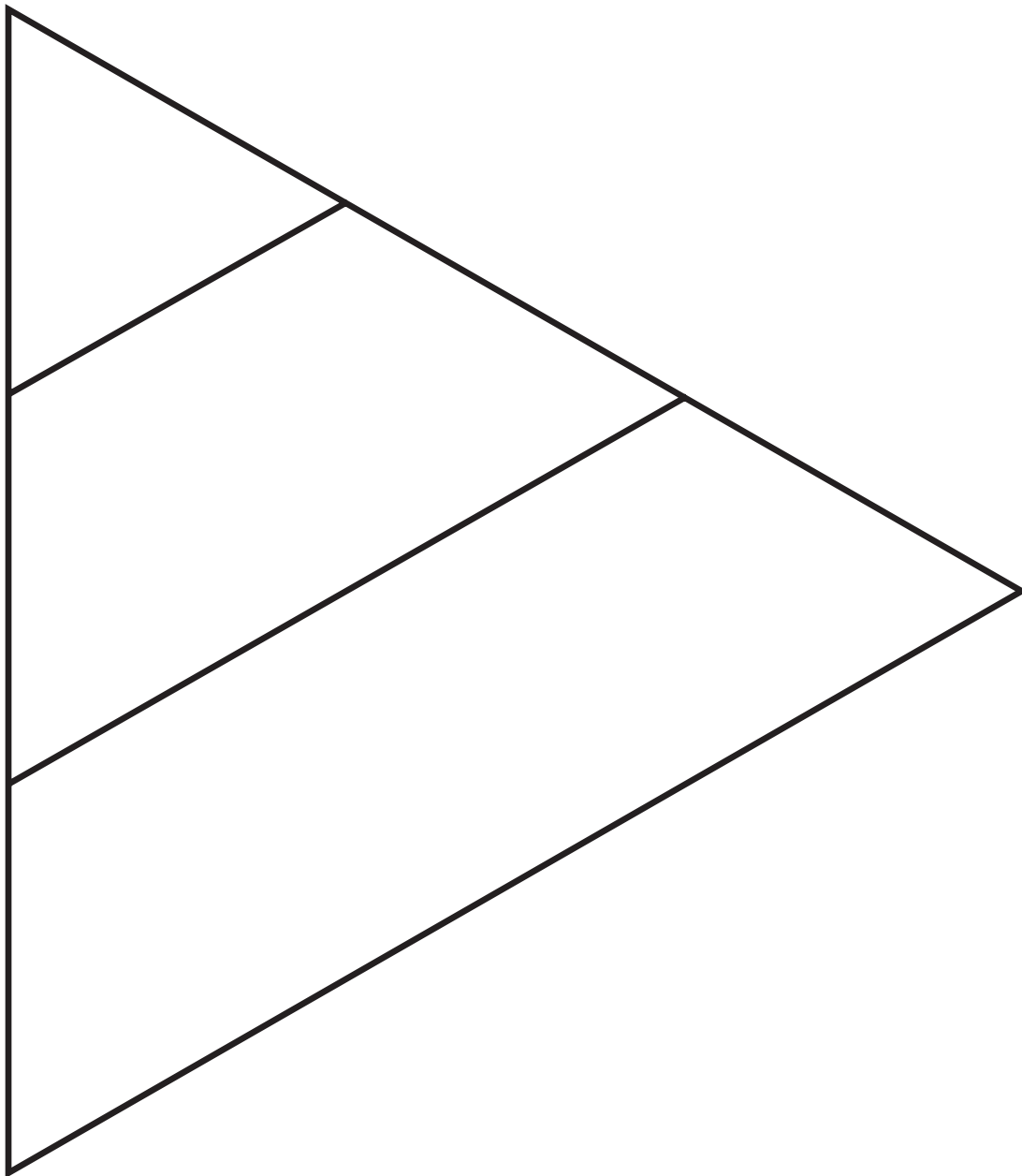
Write a procedure to draw a large equilateral triangle, side length 150. Call this procedure **bigtri**. Your triangle should look like this:



Charlotte's Web

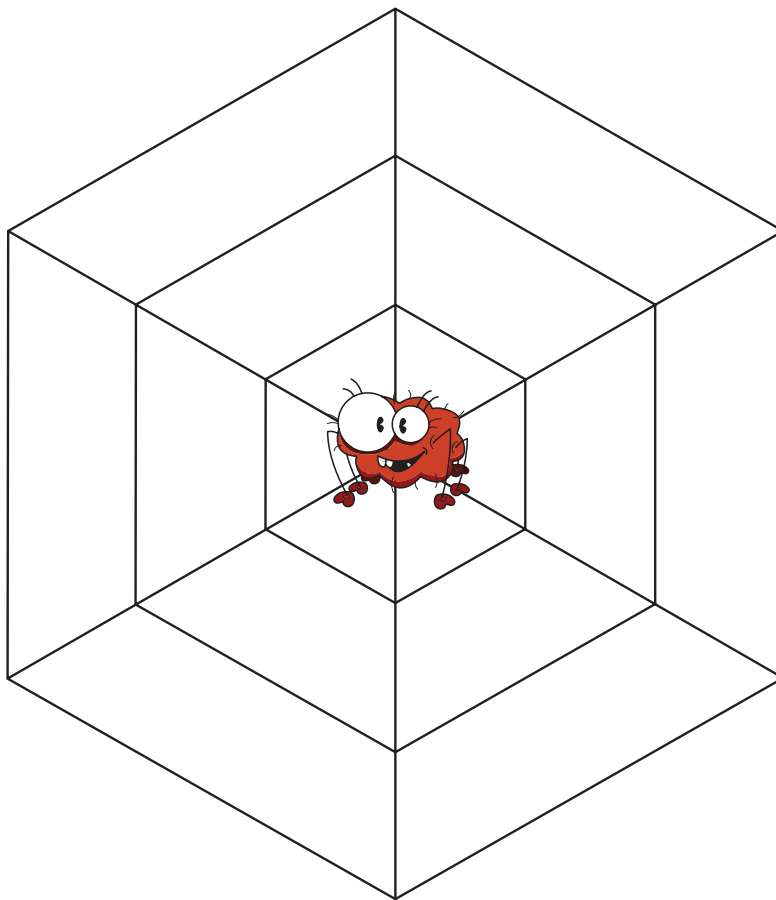
Part 2 To continue making the web:

Write a new procedure embedding `smalltri`, `medtri` and `bigtri` called `websegment`, which draws this shape:



Charlotte's Web

Use **websegment** to write a procedure called **Web** which draws the complete web.



Save your work into your documents folder.

Open your file and show your web to someone in your class.

Discuss how you made your procedure.
Write an account of how you carried out the task and the problems you faced.