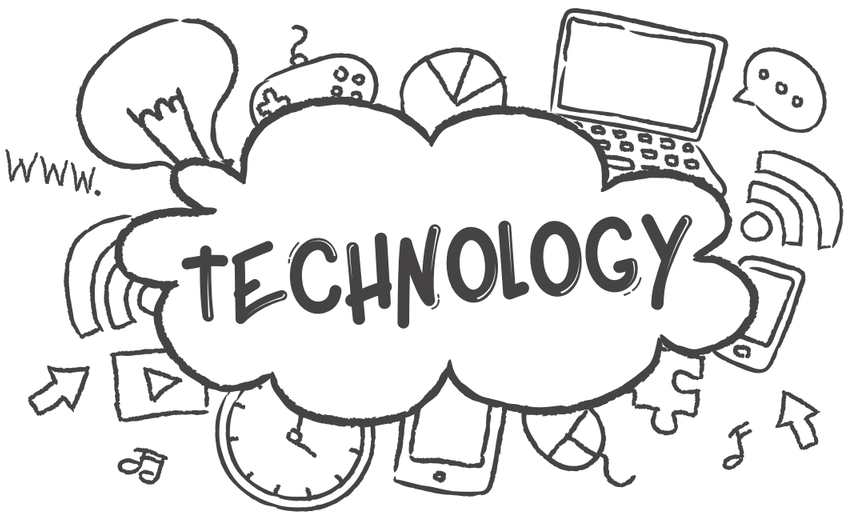
Focus On Computer Science
Grade 7

Focus on Computer Science series

For Classes 6-8

TCF's Digital Literacy Programme equips students with essential 21st-century skills through a modern Computer Science curriculum. It builds computational thinking, coding abilities, ICT proficiency, and responsible digital citizenship tailored for grades 6-8.

This curriculum helps educators prepare students for the future by developing a range of skills from fundamentals in ICT and basic productivity applications, to applying algorithmic thinking to solve problems, and promoting digital citizenship and entrepreneurship in the digital age.



The textbooks cover the following 5 strands:

Computational Thinking:
Through logic and reasoning activities.

Programming:
Through computational thinking using coding.

Computer Systems:
Understanding of how different components are combined to develop computer systems.

Digital Citizenship:
Learning about social responsibility, ethics and privacy, cyber security, and IT laws in the digital age.

IT Skills:
Improved productivity by understanding word processing, spreadsheets, presentations, online communication, and other applications.

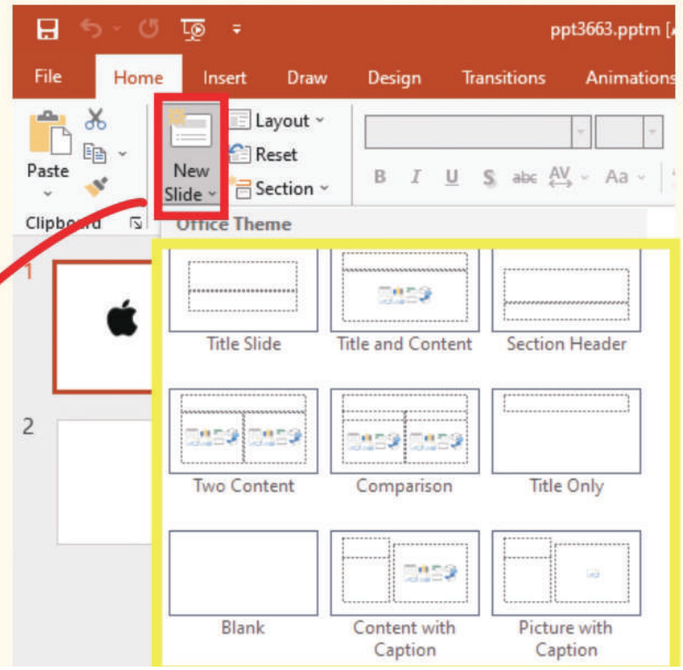
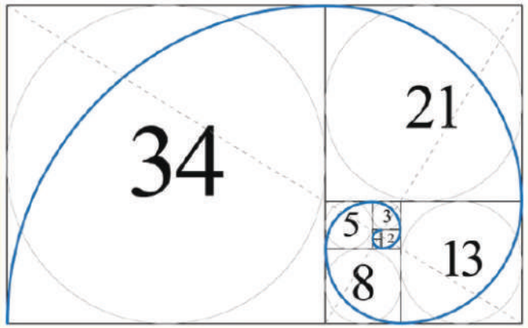


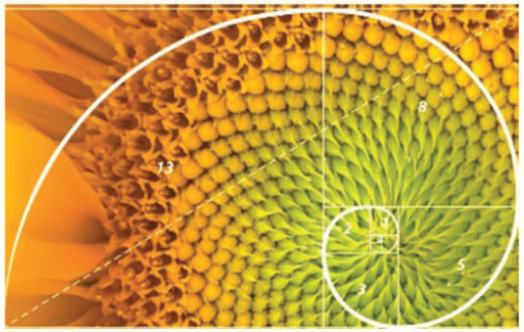
Figure 2.13 : Go to "Home", you can access different slide layouts from the drop-down menu

تصویر ۲۔۱۳: "Home" پر جائیں، یہاں آپ ڈراپ ڈاؤن مینو سے مختلف سلائیڈ لے آؤٹس تک رسائی حاصل کر سکتے ہیں۔

Layout explained visually

0, 1, 1, 2, 3, 5, 8, 13, 21,...





Introduction to Fibonacci Sequence

Focus On Computer Science
Grade 8

Efficiency of Algorithms

Step by Step Guide

Figure 4.11 A

```
START
Repeat 4
   Repeat 3
      move 10
EndRepeat
END
```

```
START
Repeat 4
   move 10
   move 10
   move 10
EndRepeat
END
```

Figure 4.11 B

```
START
Repeat 10
   Repeat 2
      move 10
   EndRepeat
EndRepeat
END
```

Figure 4.12 A →

```
START
Repeat 10
   move 10
   move 10
EndRepeat
END
```

Figure 4.12 B →

```
START
If x=10
   Repeat x
      move 10
      move 10
   EndRepeat
EndIf
END
```

Figure 4.12 C

Outer loop (n-1)	Inner loop (n-i)	i = round of bubble sorting	j = index for item selected	j + 1 = item being compared with
1	1	1	1 ⟷	2
	2	1	2 ⟷	3
	swap		List [2] = 27	List [3] = 33
	3	1	3 ⟷	4
	4	1	4 ⟷	5
	swap		List [4] = 10	List [5] = 35
2	1	2	1 ⟷	2
	2	2	2 ⟷	3
	3	2	3 ⟷	4
	swap		List [3] =10	List [4] = 27
3	1	3	1 ⟷	2
	2	3	2 ⟷	3
	swap		List [2] = 10	List [3] =27
	1	4	1 ⟷	2
	swap		List [1] = 10	List [2] =14

Repeat n -1
Change i by 1

Repeat n – i
Change j by 1

If list [j] > list [j +1]
swap list [j] and list [j + 1]
End If

Clear visual guidance

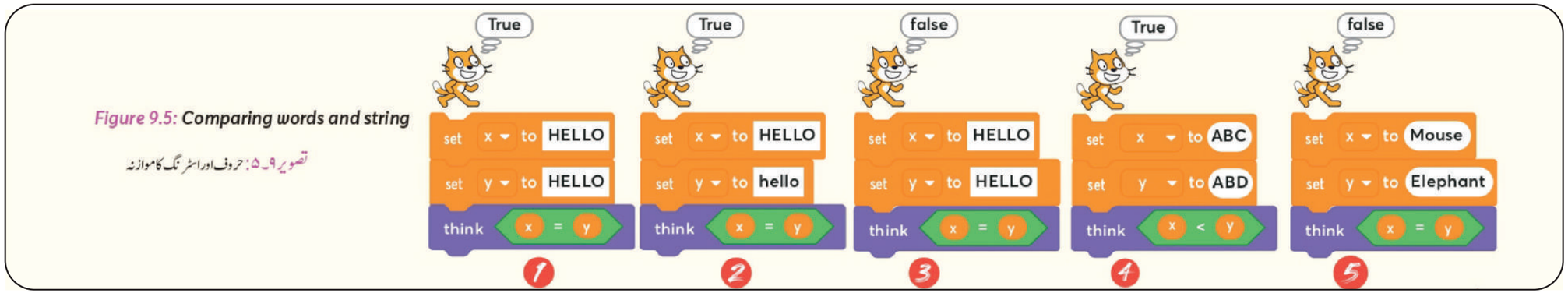


Figure 9.5: ***Comparing words and string***

تصویر ۹۔۵: حروف اور اسٹرنگ کا موازنہ

Learning Scratch through activity