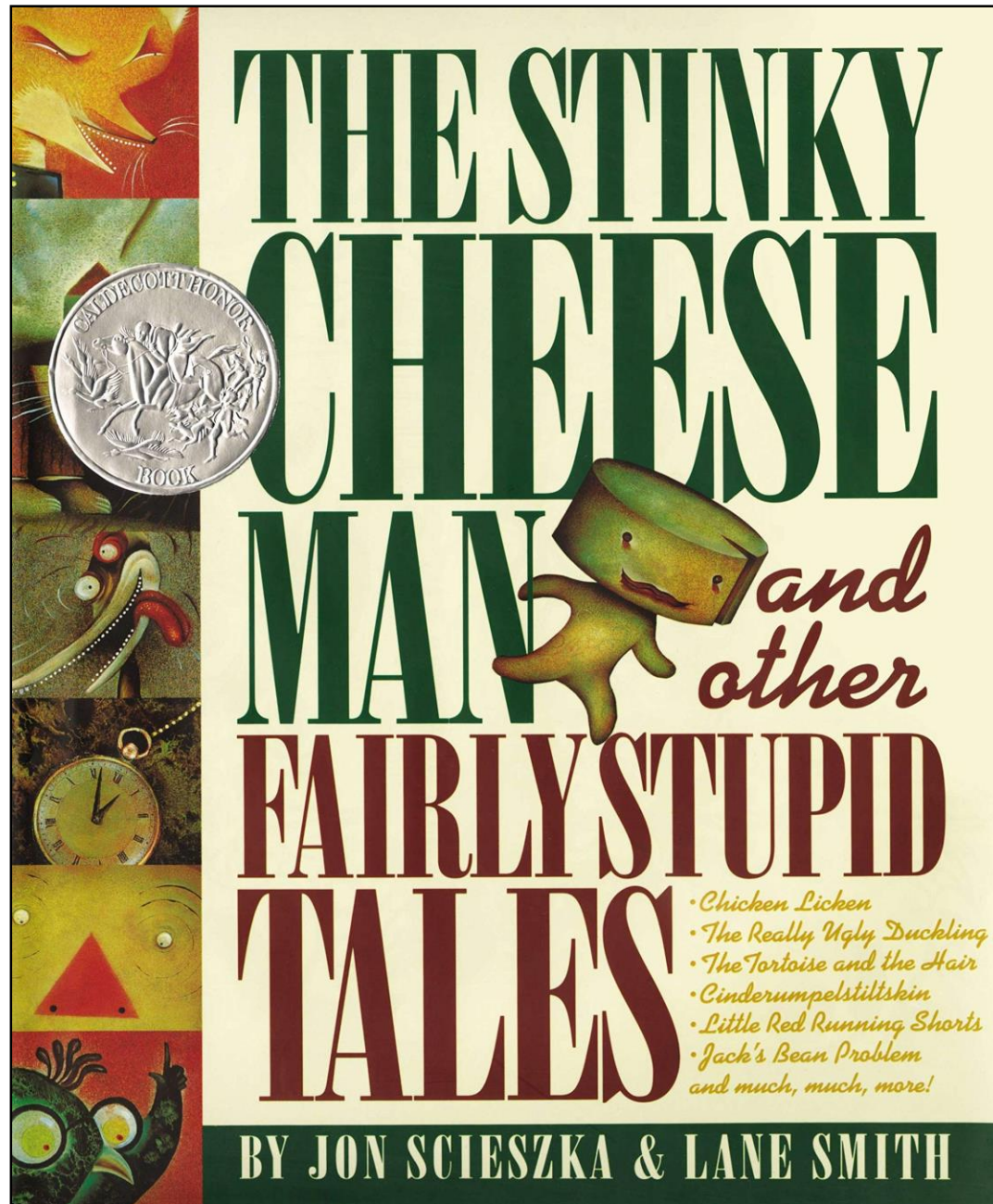


Loops

Repetition

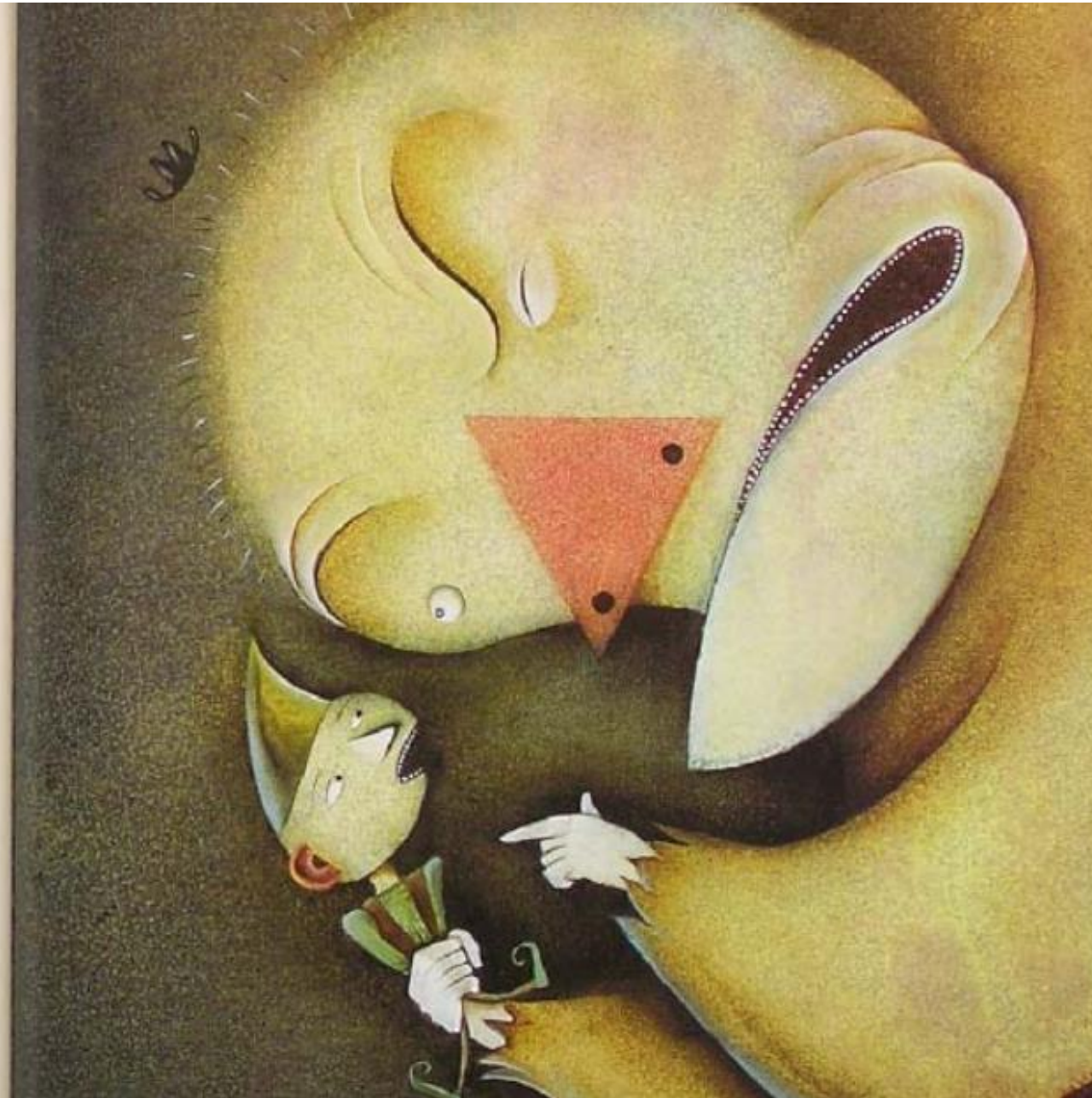


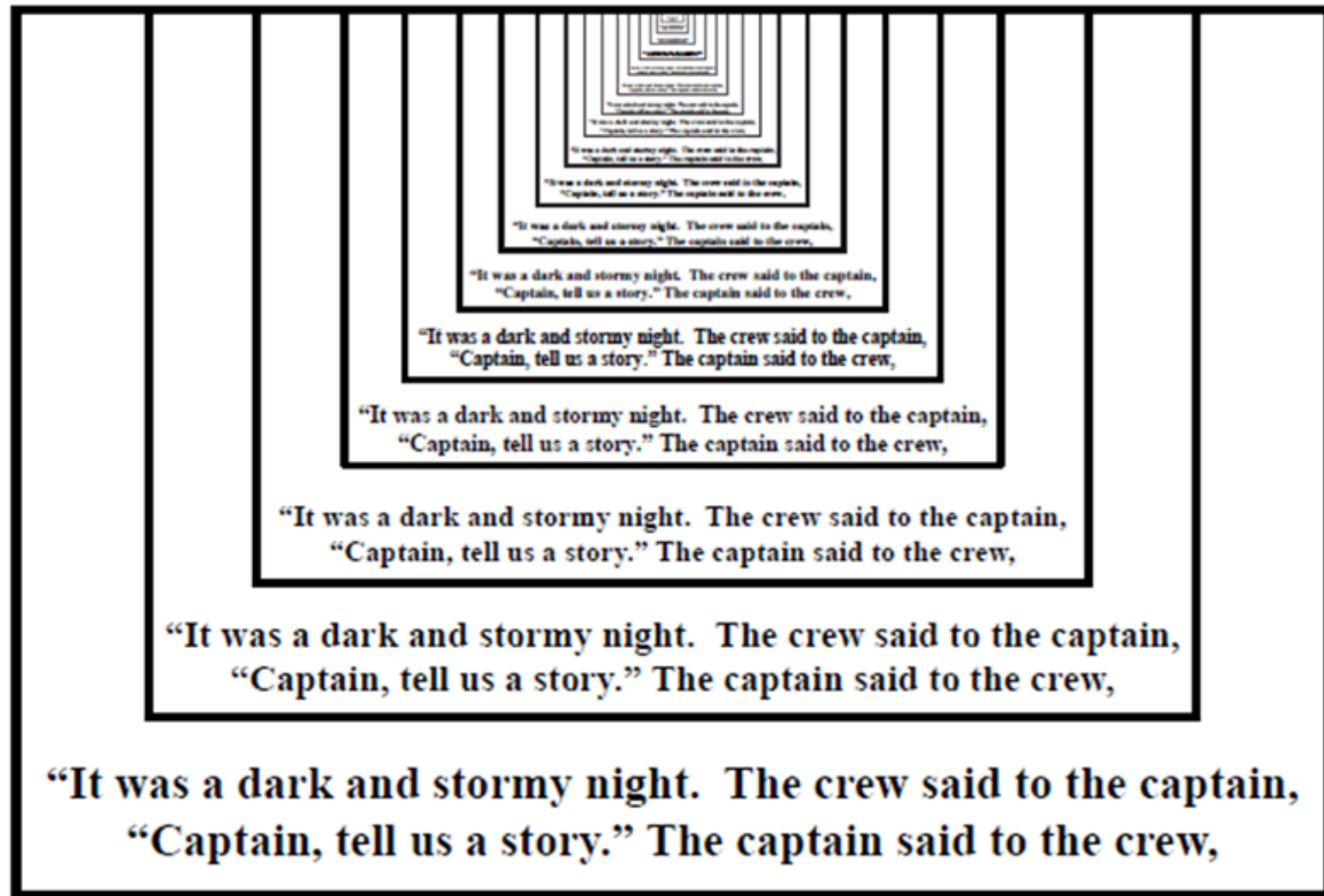
Your grade 3 teacher
may have read this
book to you.

If they didn't, I
recommend
that you look it
up some time.

Once upon a time there was a Giant. The Giant squeezed Jack and said, "TELL ME A BETTER STORY OR I WILL GRIND YOUR BONES TO MAKE MY BREAD. AND WHEN YOUR STORY IS FINISHED, I WILL GRIND YOUR BONES TO MAKE MY BREAD ANYWAY! HO, HO, HO." The Giant laughed an ugly laugh. Jack thought, "He'll kill me if I do. He'll kill me if I don't. There's only one way to get out of this." Jack cleared his throat, and then began his story.

Once upon a time there was a Giant. The Giant squeezed Jack and said, "TELL ME A BETTER STORY OR I WILL GRIND YOUR BONES TO MAKE MY BREAD. AND WHEN YOUR STORY IS FINISHED, I WILL GRIND YOUR BONES TO MAKE MY BREAD ANYWAY! HO, HO, HO." The Giant laughed an ugly laugh. Jack thought, "He'll kill me if I do. He'll kill me if I don't. There's only one way to get out of this." Jack cleared his throat, and then began his story. Once upon a time there was a Giant. The Giant squeezed Jack and said, "TELL ME A BETTER STORY OR I WILL GRIND YOUR BONES TO MAKE MY BREAD. AND WHEN YOUR STORY IS FINISHED, I WILL GRIND YOUR BONES TO MAKE MY BREAD ANYWAY! HO, HO, HO." The Giant laughed an ugly laugh. Jack thought, "He'll kill me if I do. He'll kill me if I don't. There's only one way to get out of this." Jack cleared his throat, and then began his story.





**"It was a dark and stormy night. The crew said to the captain,
"Captain, tell us a story." The captain said to the crew,**



when run

move forward

move forward

move forward

move forward

move forward

when run

repeat 5 times

do move forward



when run

move forward

move forward

move forward

move forward

move forward

Without loops,
you need to
repeat the
same step
over and over.

With
loops,
the code
is more
elegant.

when run

repeat 5 times

do move forward



Count is the loop
stopping variable.

```
for (var count = 0; count < 5; count++) {  
    moveForward();  
}
```

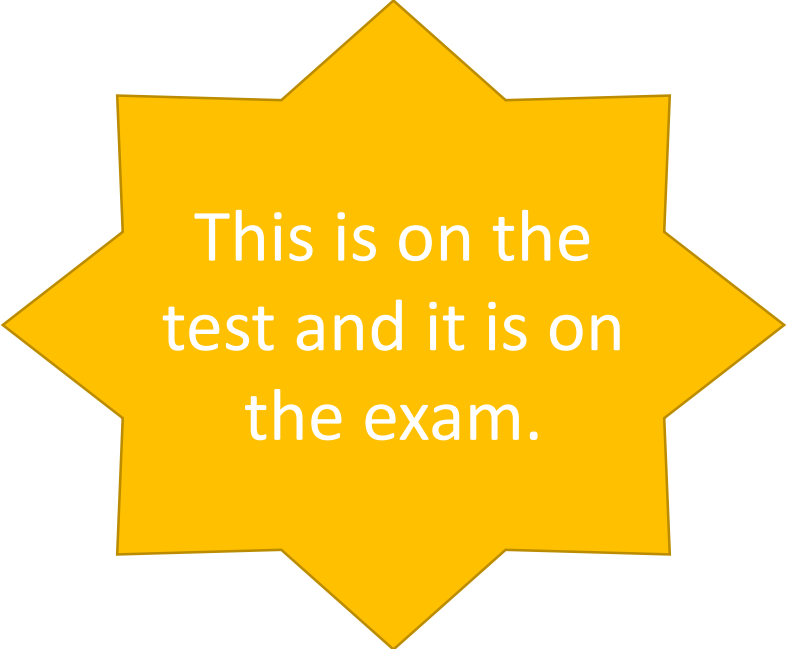



It starts at 0 and stops before it gets to 5.

```
for (var count = 0; count < 5; count++) {  
    moveForward();  
}
```

0 1 2 3 4

The Parts of a Loop



This is on the
test and it is on
the exam.

```
for (var count = 0; count < 5; count++) {  
    moveForward();  
}
```

The Parts of a Loop

A. Initialize
Loop
Stopping
Variable

A

```
for (var count = 0; count < 5; count++) {  
    moveForward();  
}
```


The Parts of a Loop

A. Initialize
Loop
Stopping
Variable

B. Test
Loop
Stopping
Condition

```
for (var Acount = 0; Bcount < 5; count++) {  
    moveForward();  
}
```

The Parts of a Loop

A. Initialize
Loop
Stopping
Variable

B. Test
Loop
Stopping
Condition

C. Steps
to
repeat

```
for (var Acount = 0; Bcount < 5; Ccount++) {  
    moveForward()  
}
```

The Parts of a Loop

A. Initialize
Loop
Stopping
Variable

B. Test
Loop
Stopping
Condition

C. Steps
to
repeat

D. Progress to
the Loop
Stopping
Condition

```
for (var Acount = 0; Bcount < 5; Dcount++) {  
    CmoveForward()  
}
```


The Parts of a Loop

A. Initialize
Loop
Stopping
Variable

B. Test
Loop
Stopping
Condition

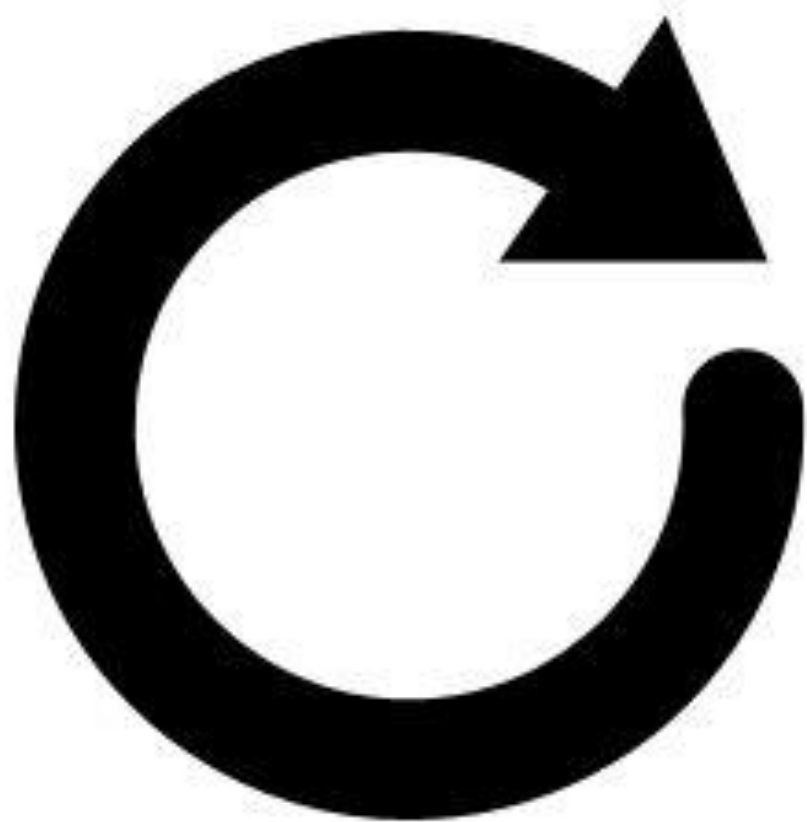
C. Steps
to
repeat

D. Progress to
the Loop
Stopping
Condition

```
graph LR; A((A)) --> B((B)); B --> D((D)); D --> B; C((C)) --> B
```

for (var count = 0; count < 5; count++) {
 moveForward();
}

The diagram illustrates the execution flow of a for loop. It features four colored circles labeled A, B, C, and D, which correspond to the four parts of the loop defined in the top section. Circle A (blue) is positioned above the initialization 'var count = 0'. Circle B (green) is positioned above the test condition 'count < 5'. Circle C (orange) is positioned above the loop body 'moveForward()'. Circle D (red) is positioned above the increment 'count++'. Arrows show the flow: from A to B, from B to D, from D back to B, and from C to B. The code is color-coded to match these parts: 'var count' and '0' are blue, 'count < 5' is green, 'moveForward()' is orange, and 'count++' is red.



LOOPS REPEAT
ACTIONS...

SO YOU DON'T HAVE TO