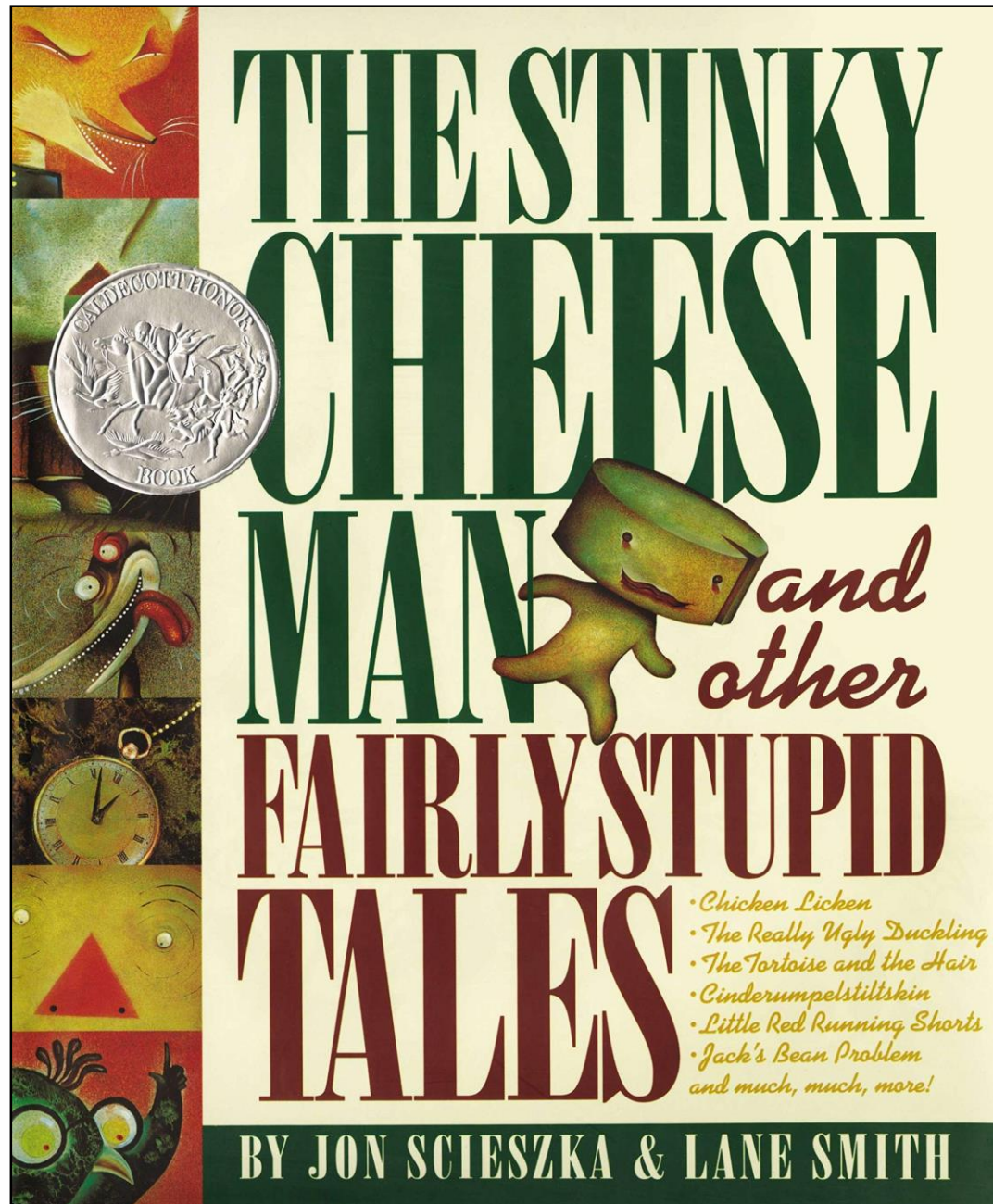


# Loops

Repetition



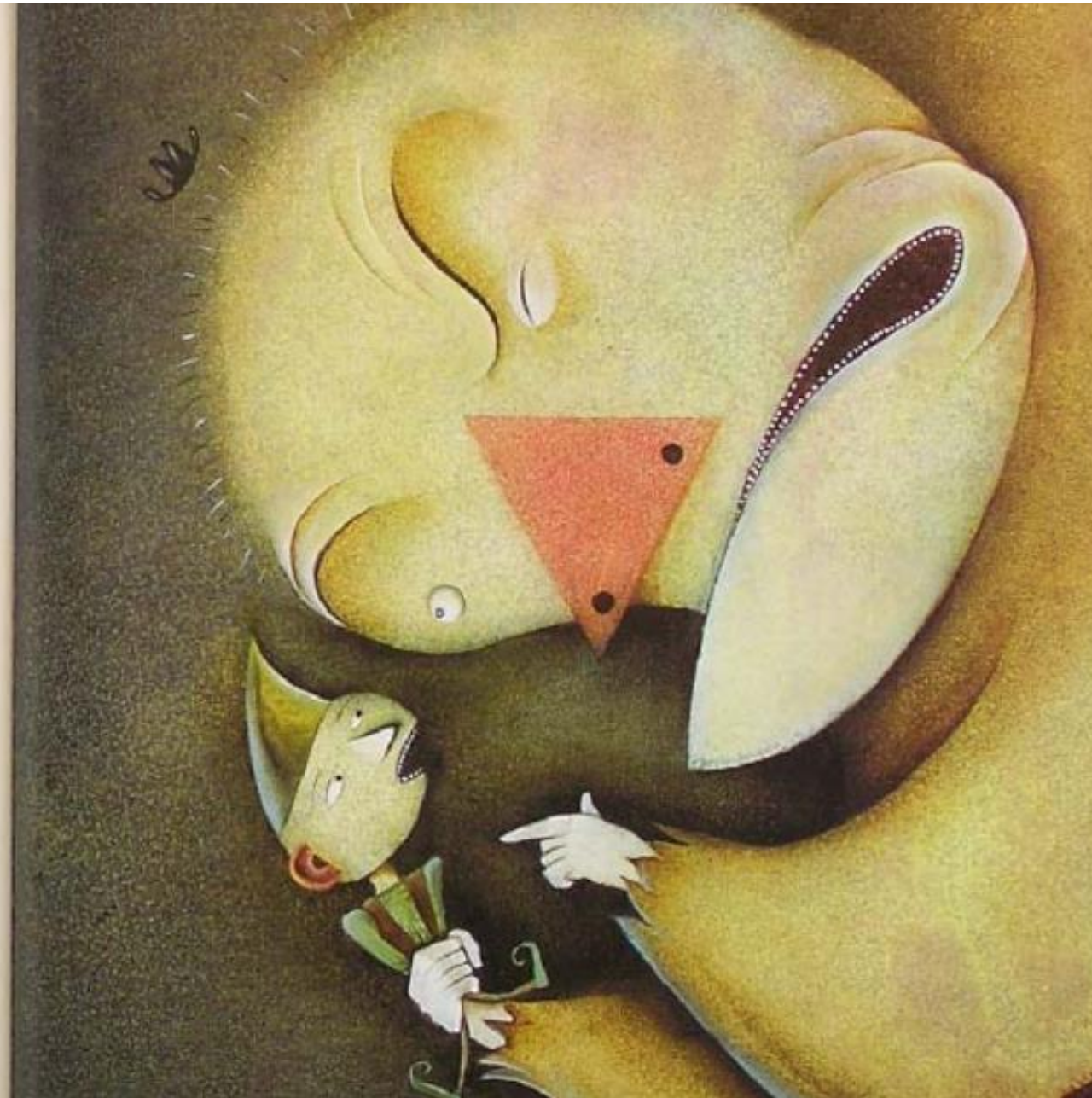
Your grade 3 teacher may have read this book to you.

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.

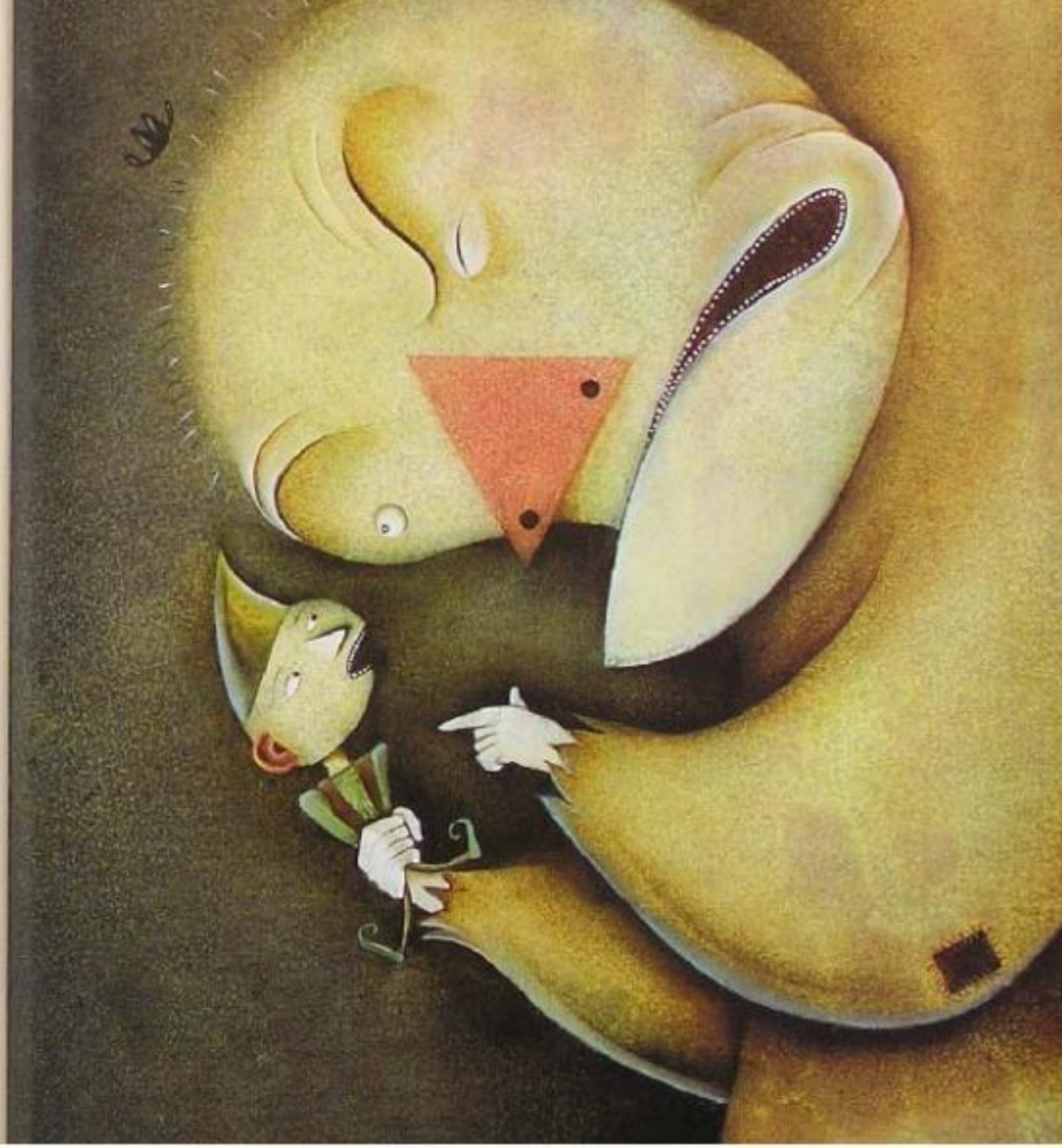
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It was a dark and stormy night. The crew said to the captain,  
"Captain, tell us a story." The captain said to the crew,

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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();  
}
```



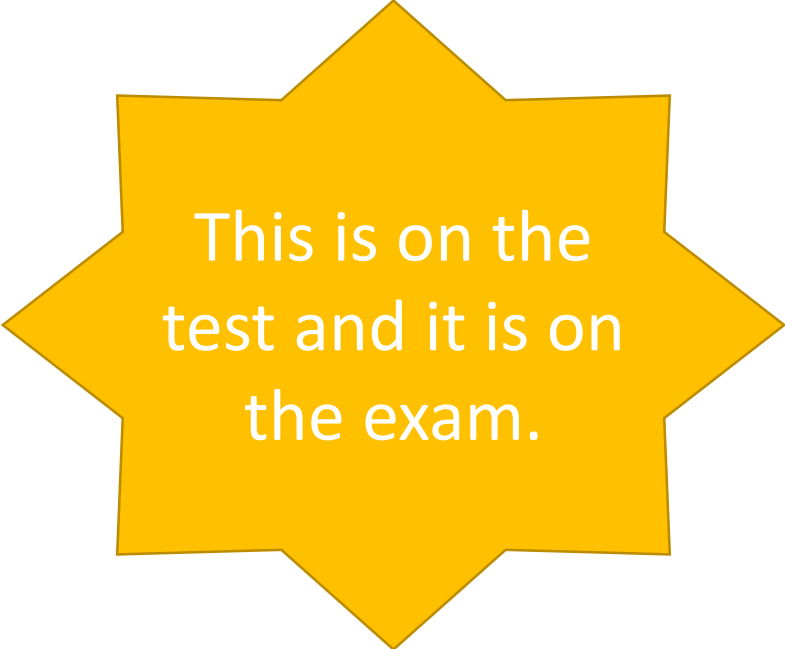


It starts at 0 and stops before it gets to 5.

```
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; count++) {  
    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

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



# The Parts of a Loop

A. Initialize  
Loop  
Stopping  
Variable

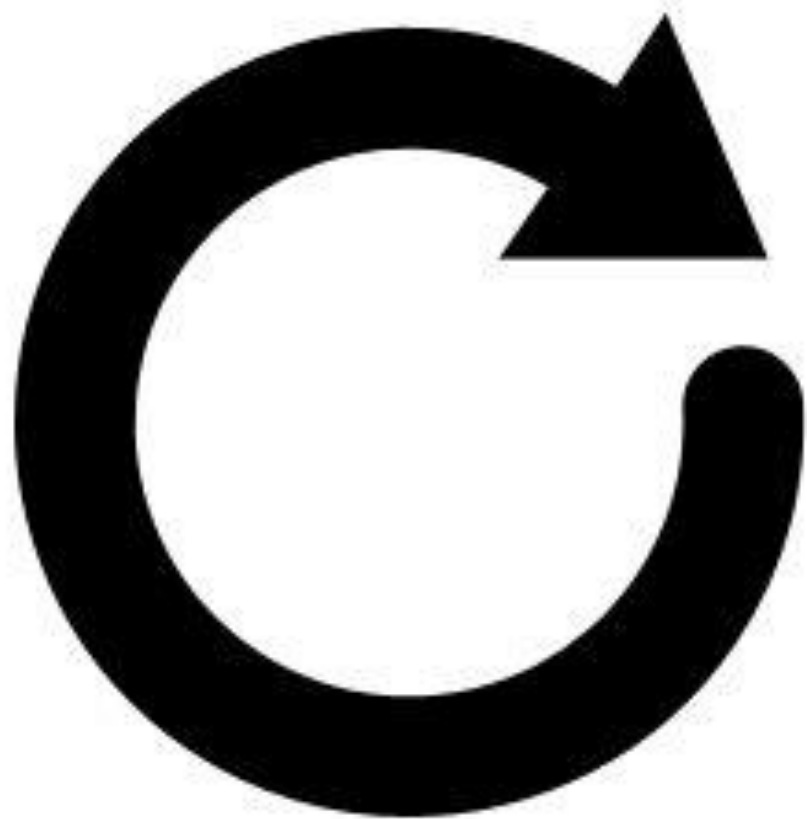
B. Test  
Loop  
Stopping  
Condition

C. Steps  
to  
repeat

D. Progress to  
the Loop  
Stopping  
Condition

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

The diagram shows a for loop with four colored circles (A, B, C, D) and arrows pointing to specific parts of the code. Circle A (blue) points to the initialization 'var count = 0'. Circle B (green) points to the test condition 'count < 5'. Circle C (orange) points to the body 'moveForward()'. Circle D (red) points to the increment 'count++'. Arrows show the flow: from D to B, from B to C, and from C back to B, forming a loop.



LOOPS REPEAT  
ACTIONS...  
SO YOU DON'T HAVE TO