

Essential Computing 1

Casting



Implicit casts are automatic and without loss of precision

```
int fishCount = scanner.nextInt();  
  
// int -> float  
float slicedFishCountF = fishCount;  
  
// float -> double  
double slicedFishCountD = slicedFishCountF;
```

Implicit casts not allowed when we would loose precision

```
double slicedFishCountD = scanner.nextDouble();  
  
// double -> float  
float slicedFishCountF = slicedFishCountD;  
  
// float -> int  
int fishCount = slicedFishCountF;
```

Table of implicit casts

		Cast to					
		byte	short	int	long	float	double
Cast from	byte		✓	✓	✓	✓	✓
	short	✗		✓	✓	✓	✓
	int	✗	✗		✓	✓	✓
	long	✗	✗	✗		✓	✓
	float	✗	✗	✗	✗		✓
	double	✗	✗	✗	✗	✗	

Use **explicit casts** when you want to force a conversion

```
// Force integer division to produce double result.  
final int FISH_PER_BOX = 5;  
int fishRequested = scanner.nextInt();  
double boxCount = FISH_PER_BOX / (float) fishRequested;
```

Use **explicit casts** when you want to force a conversion

```
// Generate a random integer between 0 and 3 (both included).  
int value = (int) ( Math.random() * 4 );
```