

## Kaon ( $K^+$ ) (20 Points)

### Strange Quark

Electric Charge:  $-1/3$   
Spin:  $1/2$   
Mass:  $93.5 \text{ MeV}$   
Mean Lifetime: 10 nanoseconds

Colour Charge: Yes  
Baryon Number:  $1/3$   
2nd generation (2 points)

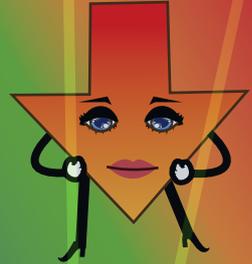


## Kaon ( $K^-$ ) (18 Points)

### Down Quark

Electric Charge:  $-1/3$   
Spin:  $1/2$   
Mass:  $4.7 \text{ MeV}$   
Mean Lifetime: Stable

Colour Charge: Yes  
Baryon Number:  $1/3$   
1st generation (1 point)



### Anti-Down Quark

Electric Charge:  $+1/3$   
Spin:  $1/2$   
Mass:  $4.7 \text{ MeV}$   
Mean Lifetime: Stable

Colour Charge: Yes  
Baryon Number:  $-1/3$   
1st generation (1 point)



### Anti-Strange Quark

Electric Charge:  $+1/3$   
Spin:  $1/2$   
Mass:  $93.5 \text{ MeV}$   
Mean Lifetime: 10 nanoseconds

Colour Charge: Yes  
Baryon Number:  $-1/3$   
2nd generation (2 points)



**Electric Charge:  $+1$**   
**Spin:  $0$**   
**Mass:  $494 \text{ MeV}$**   
**Mean Lifetime:  $1.24 \times 10^{-8} \text{ s}$**

Charged Kaons were discovered in cosmic rays in 1947. Their discovery was essential to the development of the standard model of physics: in particular the quark model and the theory of quark mixing.

Kaons also played a key role in understanding CP violation.

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**Spin:  $0$**   
**Mass:  $494 \text{ MeV}$**   
**Mean Lifetime:  $1.24 \times 10^{-8} \text{ s}$**

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# Particle Builder

Target Card

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