

# Pandas Plotting

matplotlib, pandas, seaborn, altair, ggplot

```
In [1]: import pandas as pd
```

```
In [2]: url = "https://data.cdc.gov/api/views/v6ab-adf5/rows.csv?accessType=DOWNLOAD"
```

```
In [3]: data1 = pd.read_csv(url)
```

```
In [4]: data1.head()
```

```
Out[4]:
```

	Year	Age Group	Death Rate
0	1900	1-4 Years	1983.8
1	1901	1-4 Years	1695.0
2	1902	1-4 Years	1655.7
3	1903	1-4 Years	1542.1
4	1904	1-4 Years	1591.5

```
In [5]: data1.columns = data1.columns.str.replace(" ", "")
```

```
In [8]: data1.head()
```

```
Out[8]:
```

	Year	AgeGroup	DeathRate
0	1900	1-4 Years	1983.8
1	1901	1-4 Years	1695.0
2	1902	1-4 Years	1655.7
3	1903	1-4 Years	1542.1
4	1904	1-4 Years	1591.5

```
In [9]: data1w = data1.pivot(  
index='Year', columns = 'AgeGroup', values = 'DeathRate')
```

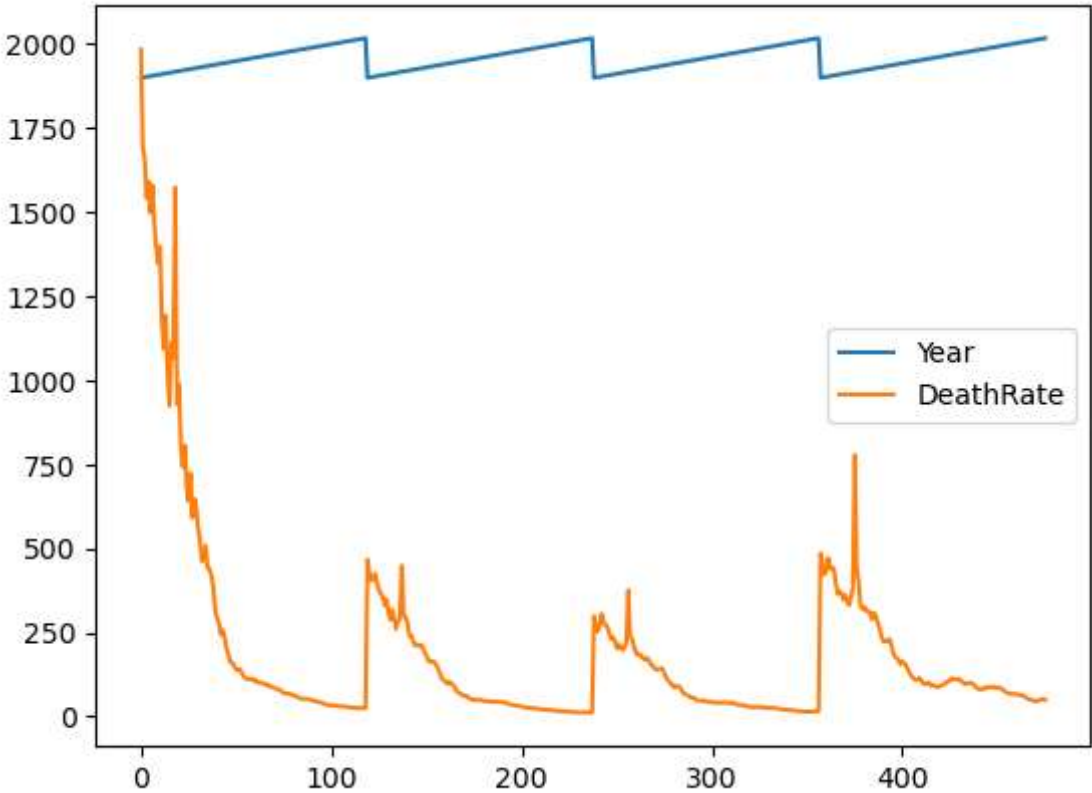
```
In [10]: data1w.head()
```

Out[10]: **AgeGroup 1-4 Years 10-14 Years 15-19 Years 5-9 Years**

Year				
1900	1983.8	298.3	484.8	466.1
1901	1695.0	273.6	454.4	427.6
1902	1655.7	252.5	421.5	403.3
1903	1542.1	268.2	434.1	414.7
1904	1591.5	305.2	471.4	425.0

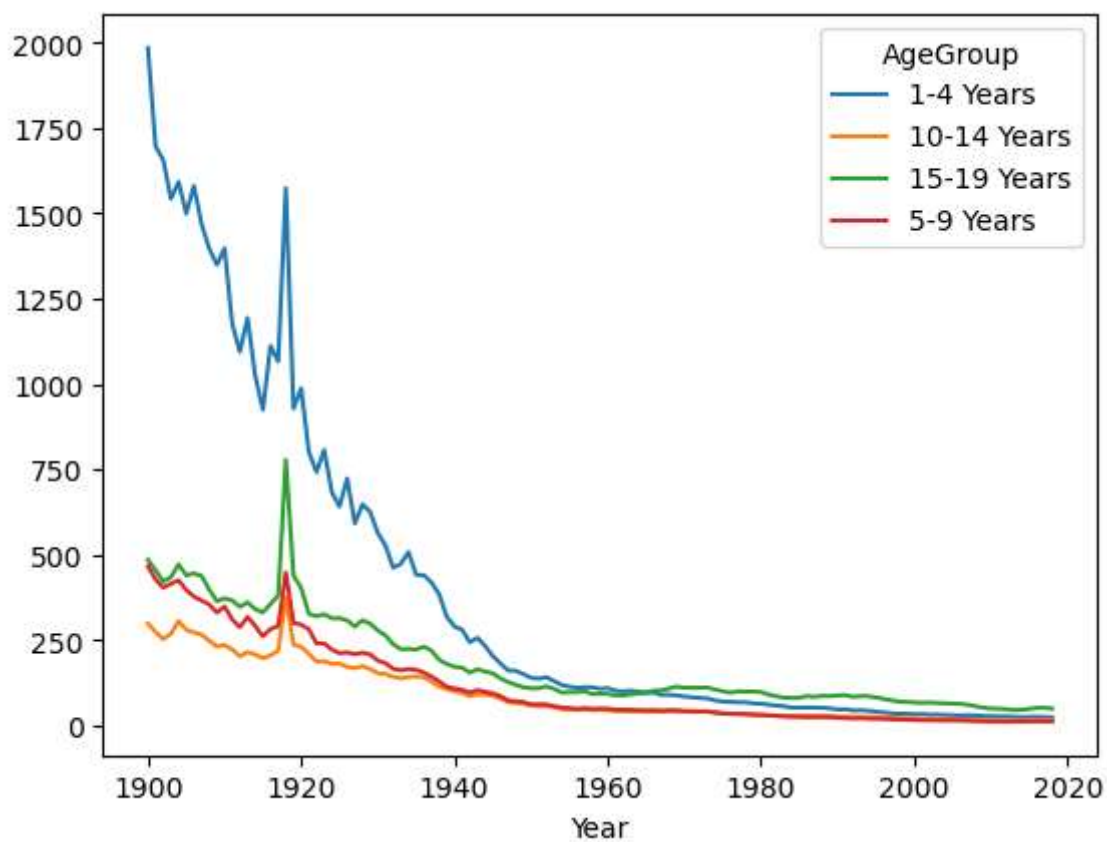
In [11]: `data1.plot()`

Out[11]: `<AxesSubplot:>`



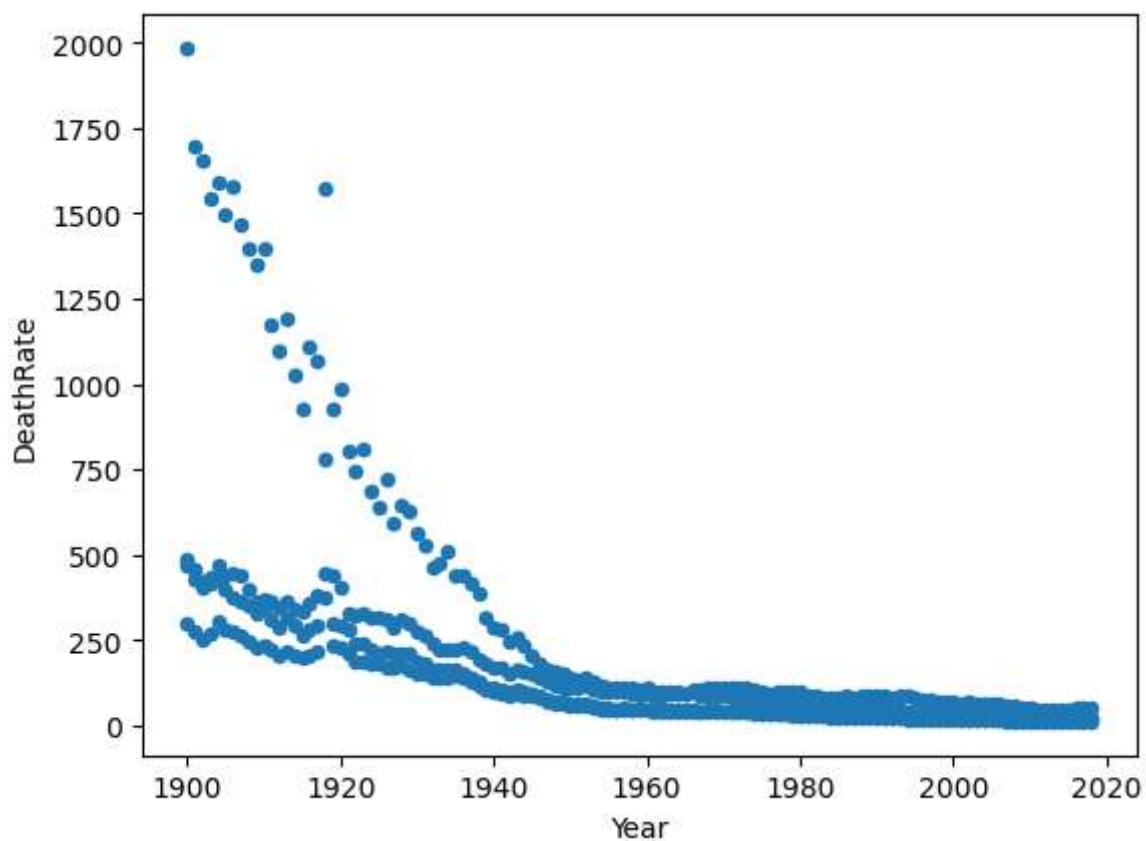
In [12]: `data1w.plot()`

Out[12]: `<AxesSubplot:xlabel='Year'>`



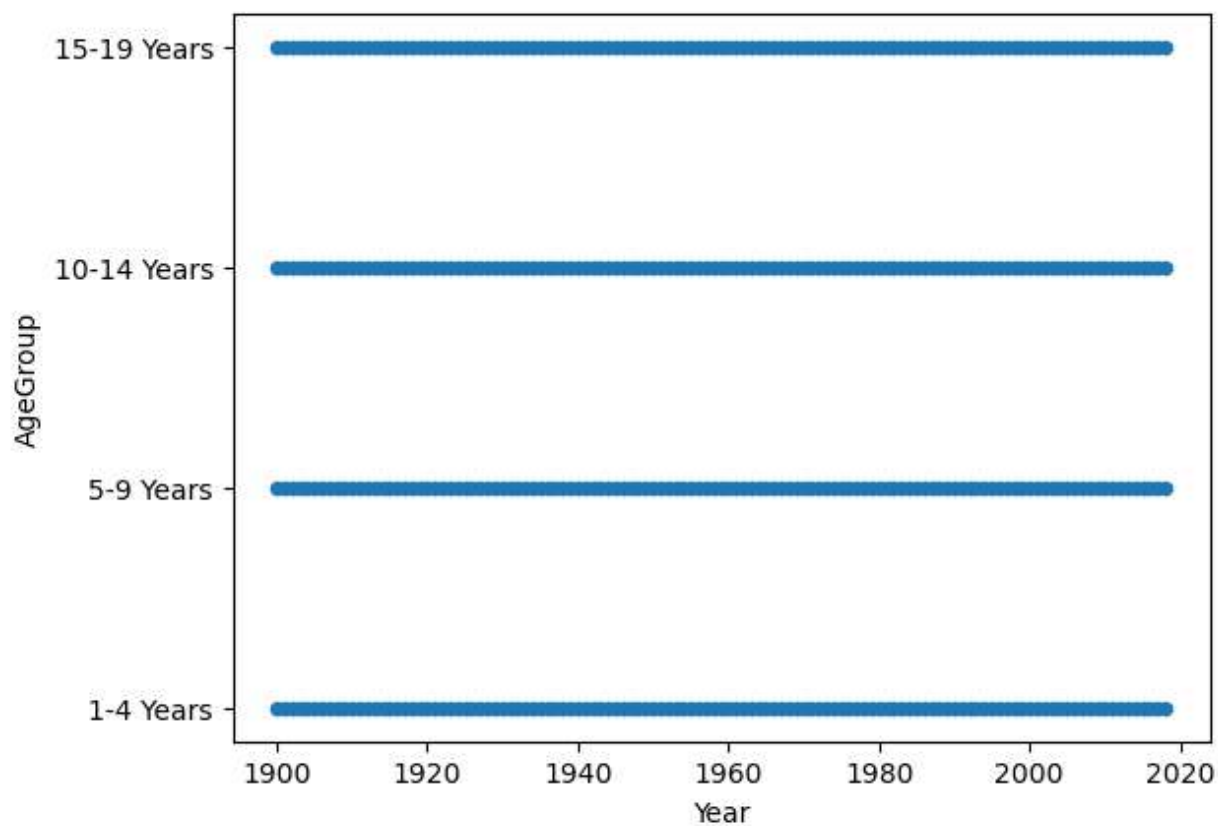
```
In [14]: data1.plot.scatter(x='Year', y='DeathRate')
```

```
Out[14]: <AxesSubplot:xlabel='Year', ylabel='DeathRate'>
```



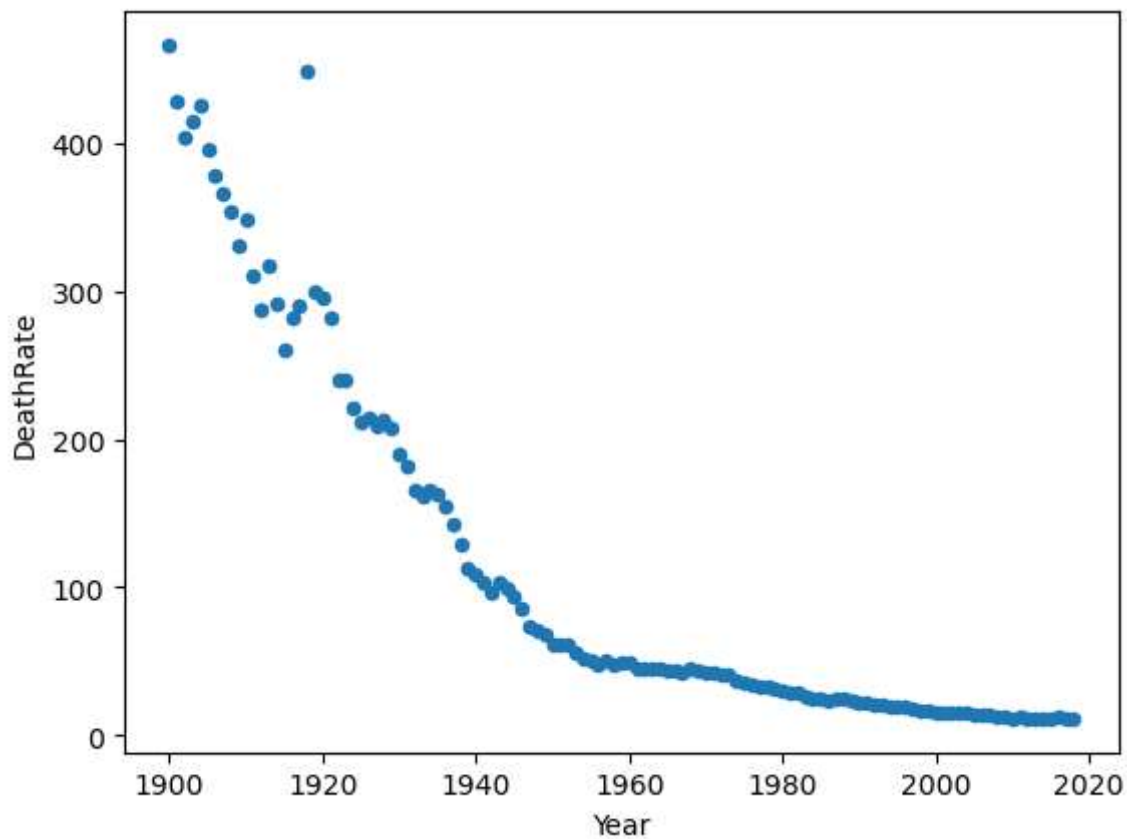
```
In [41]: data1.plot.scatter(x='Year', y='AgeGroup')
```

```
Out[41]: <AxesSubplot:xlabel='Year', ylabel='AgeGroup'>
```



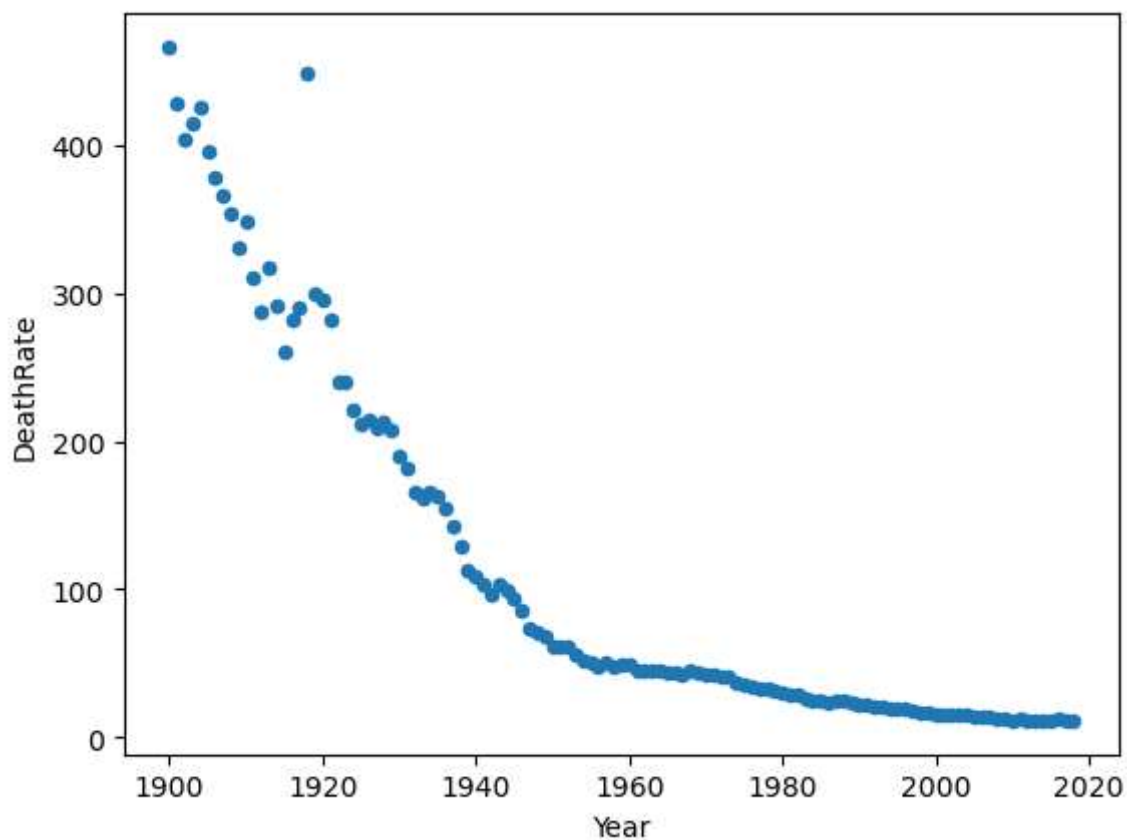
```
In [44]: data1.query('AgeGroup == "5-9 Years"') \
        .plot.scatter(x='Year', y='DeathRate')
```

```
Out[44]: <AxesSubplot:xlabel='Year', ylabel='DeathRate'>
```



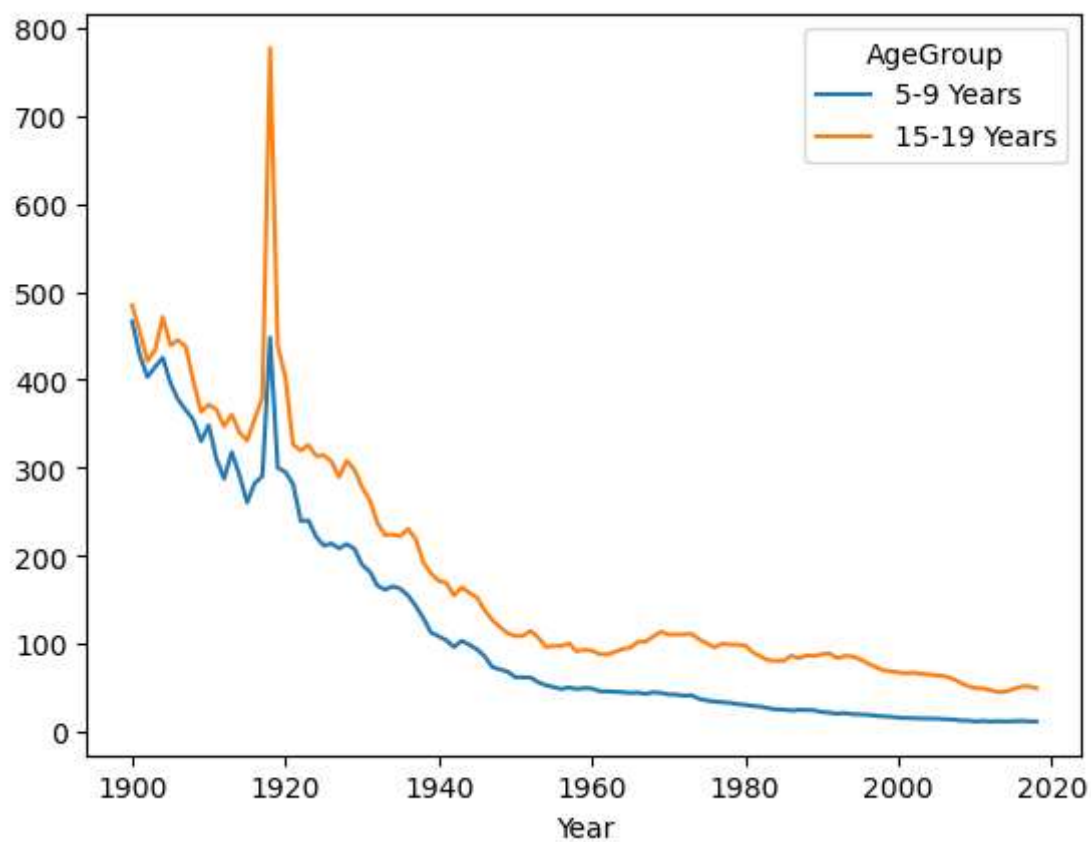
```
In [45]: data1.query('AgeGroup == "5-9 Years"') \
        .plot.scatter(x='Year', y='DeathRate')
```

Out[45]: <AxesSubplot:xlabel='Year', ylabel='DeathRate'>



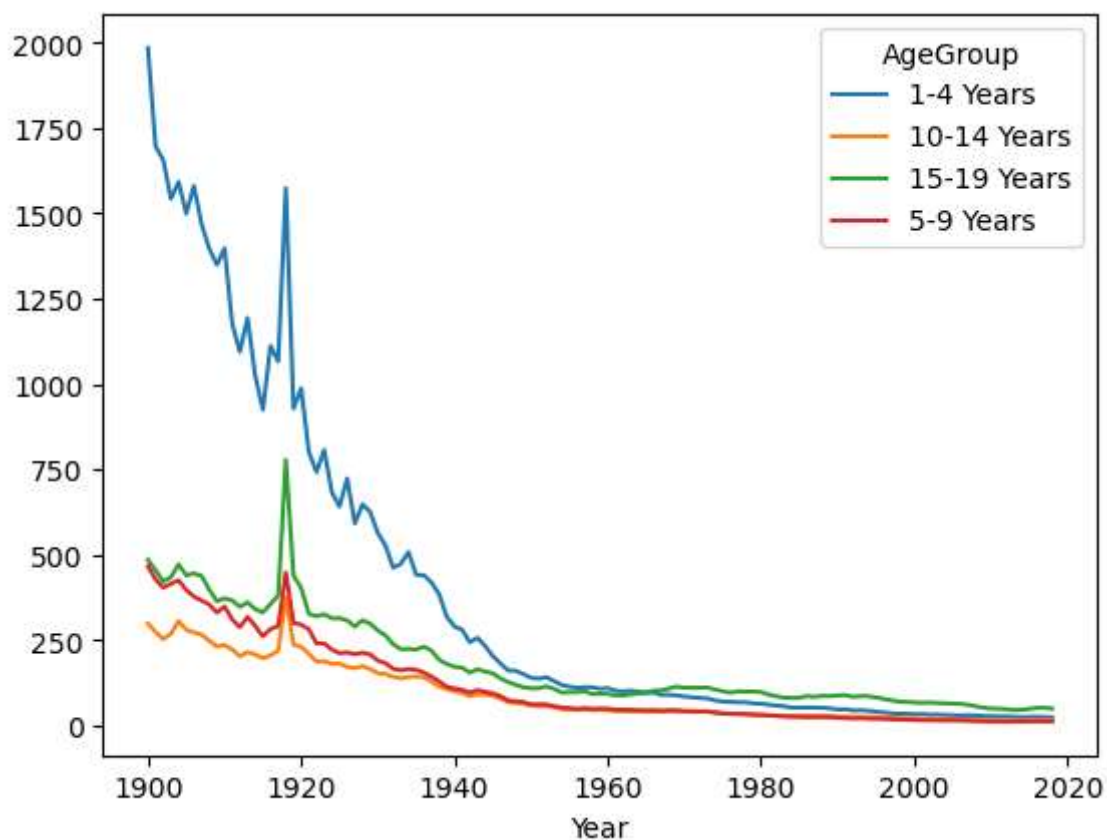
```
In [46]: data1w.plot.line(y=['5-9 Years', '15-19 Years'])
```

```
Out[46]: <AxesSubplot:xlabel='Year'>
```



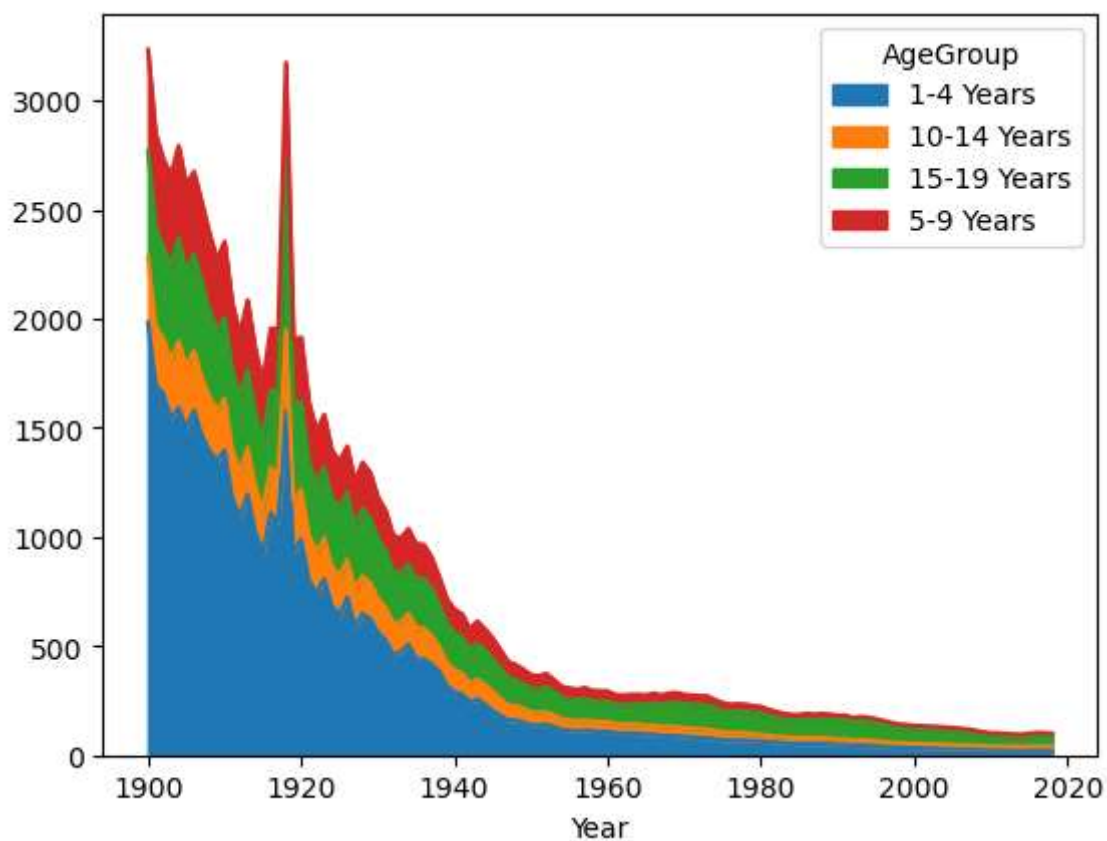
```
In [18]: data1w.plot.line()
```

```
Out[18]: <AxesSubplot:xlabel='Year'>
```



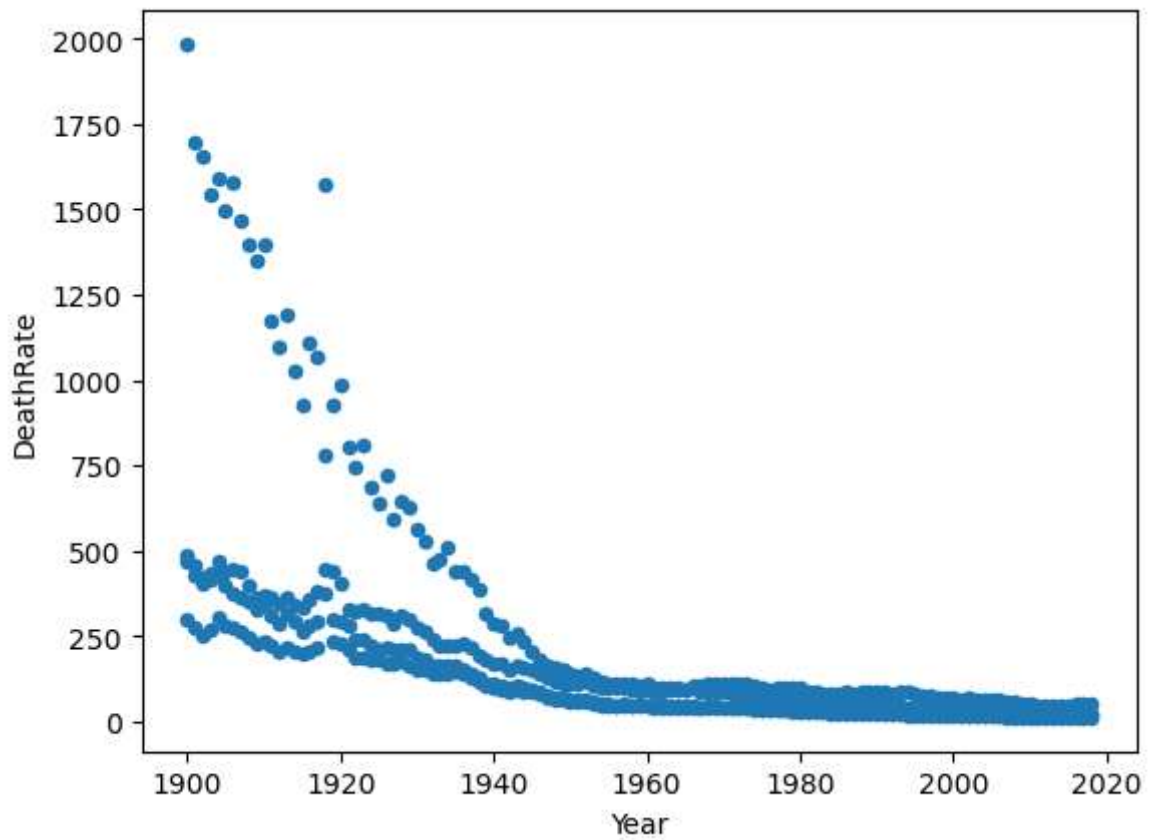
```
In [19]: data1w.plot.area()
```

```
Out[19]: <AxesSubplot:xlabel='Year'>
```



```
In [21]: data1.plot.scatter(x='Year', y='DeathRate')
```

```
Out[21]: <AxesSubplot:xlabel='Year', ylabel='DeathRate'>
```

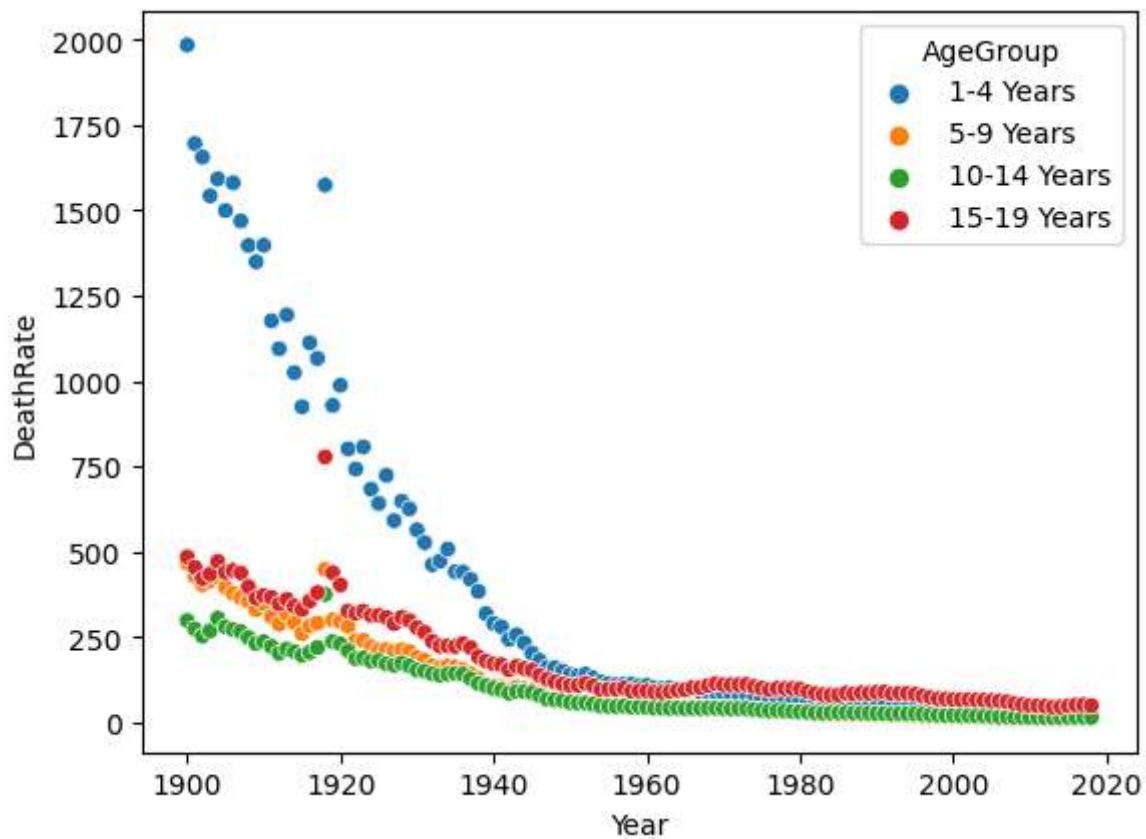


```
In [22]: import seaborn as sns
```

```
In [27]: sns.scatterplot(data=data1, x='Year', y='DeathRate', hue='AgeGroup')
```

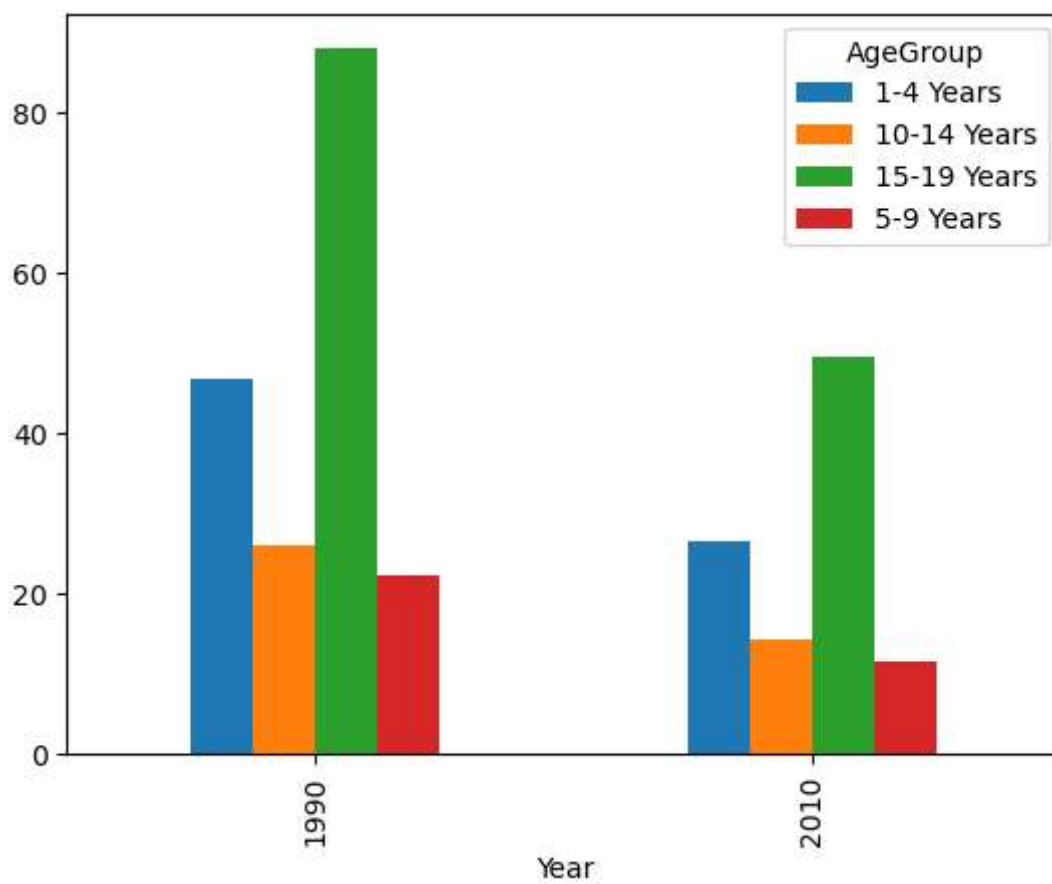
```
Out[27]: <AxesSubplot:xlabel='Year', ylabel='DeathRate'>
```





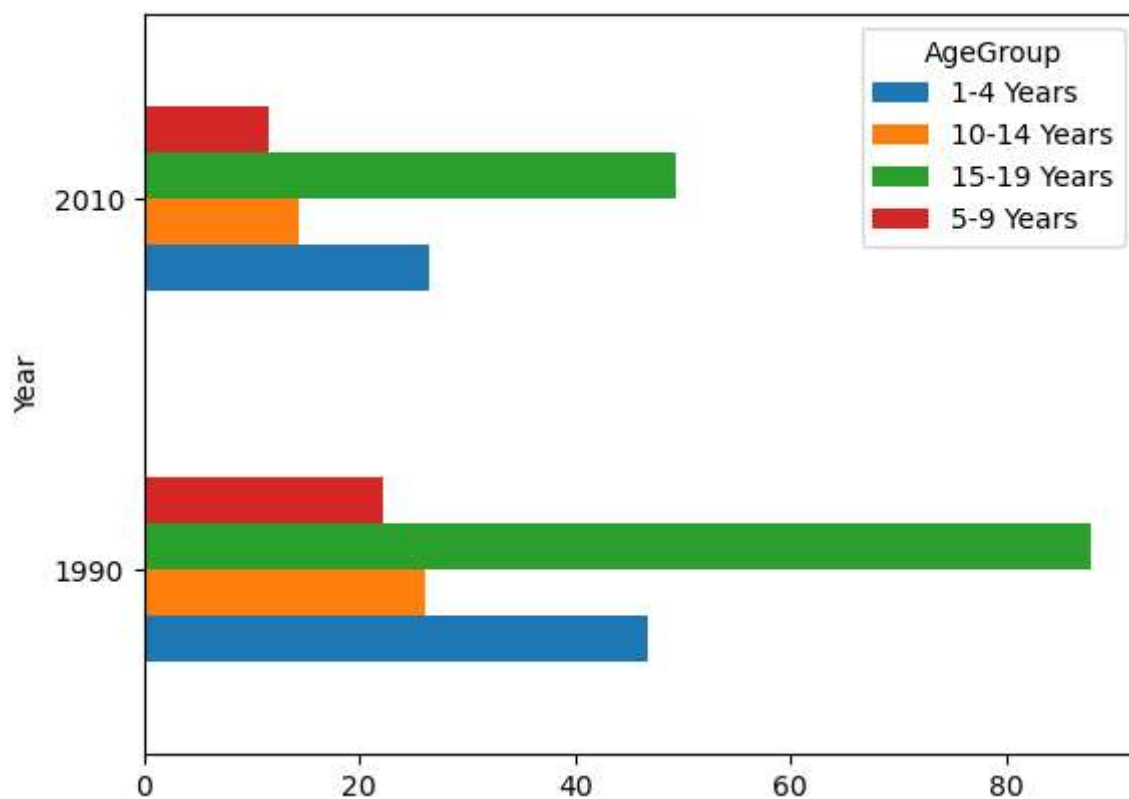
```
In [47]: data1w.query('Year in (1990, 2010)').plot.bar()
```

```
Out[47]: <AxesSubplot:xlabel='Year'>
```



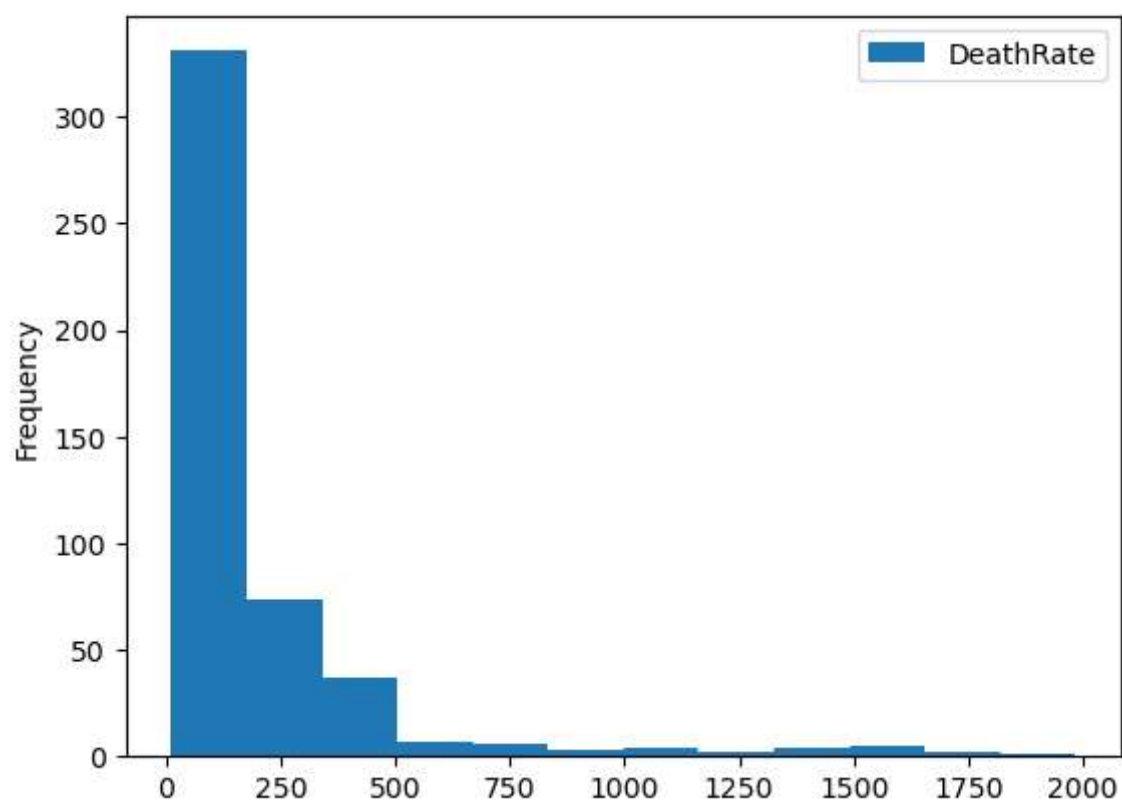
```
In [48]: data1w.query('Year in (1990, 2010)').plot.barh()
```

```
Out[48]: <AxesSubplot:ylabel='Year'>
```



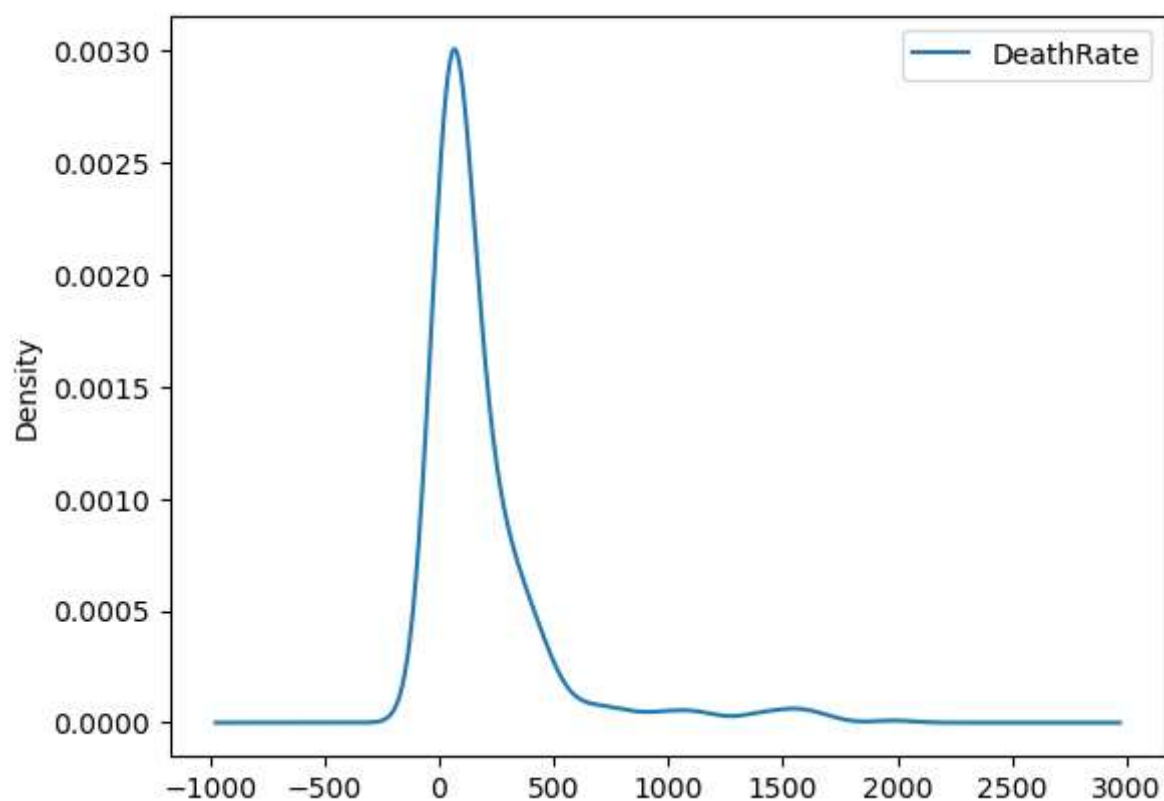
```
In [49]: data1.plot.hist(y='DeathRate', bins=12)
```

```
Out[49]: <AxesSubplot:ylabel='Frequency'>
```



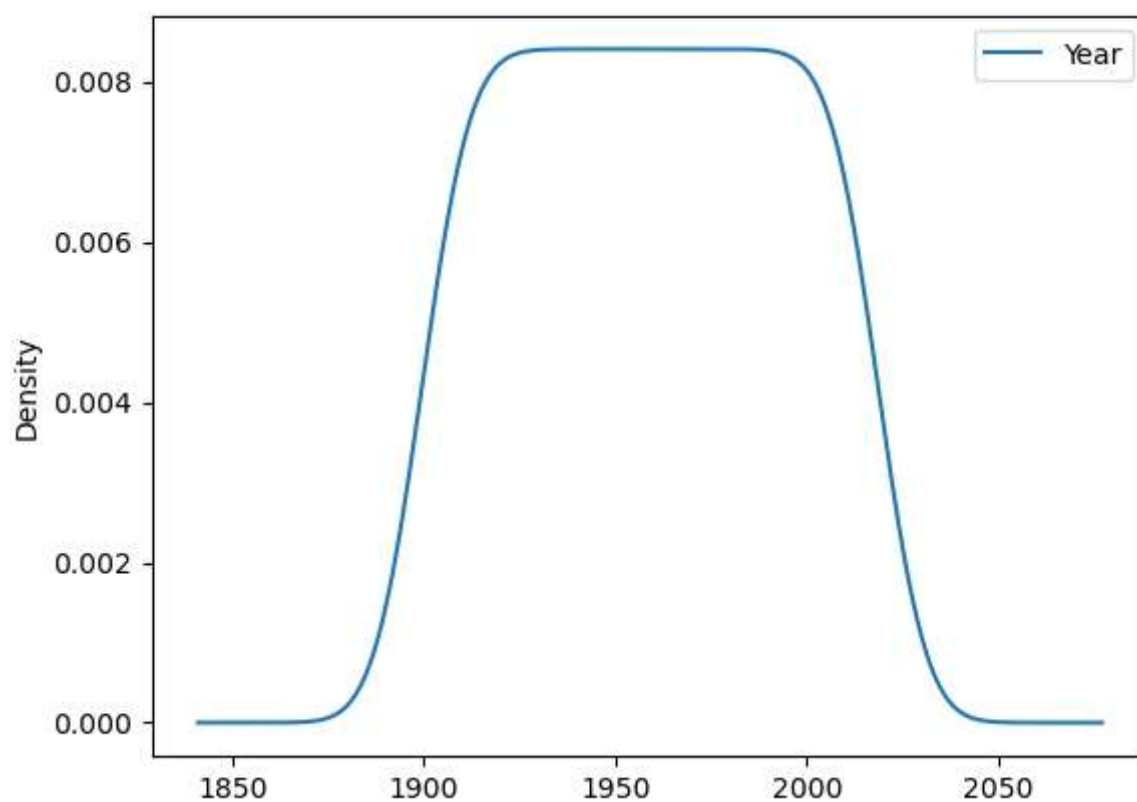
```
In [35]: data1.plot.density(y='DeathRate')
```

```
Out[35]: <AxesSubplot:ylabel='Density'>
```



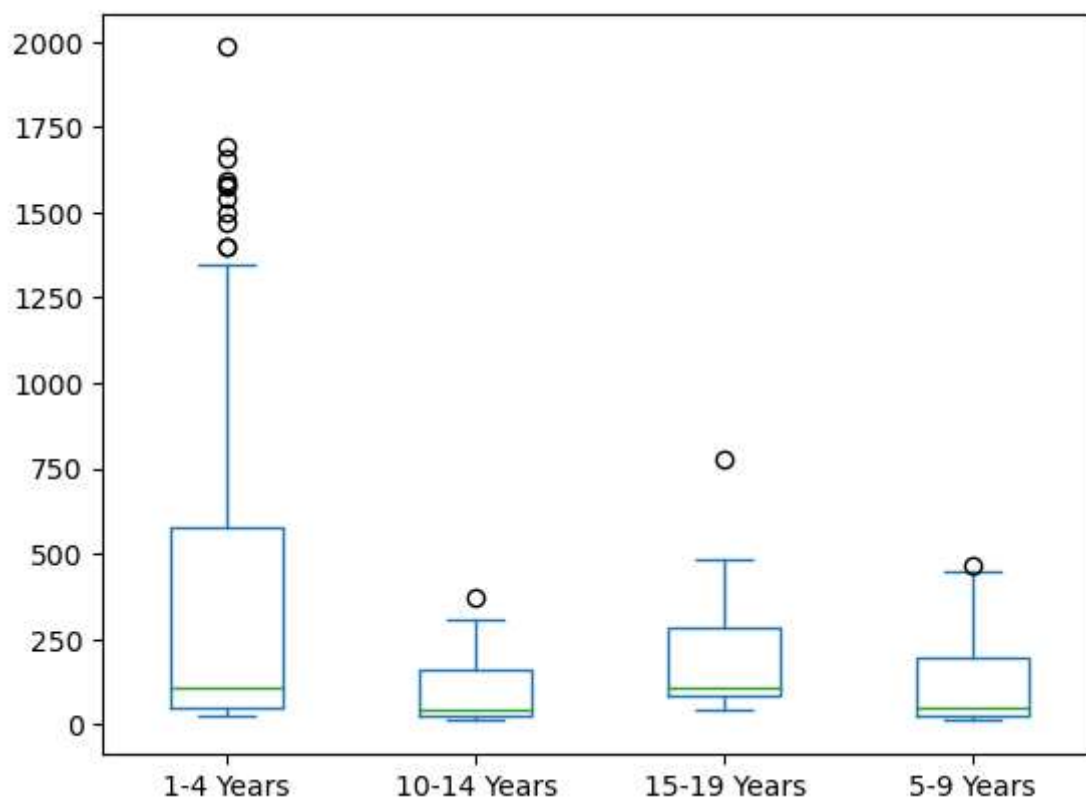
```
In [51]: data1.plot.density(y='Year')
```

```
Out[51]: <AxesSubplot:ylabel='Density'>
```



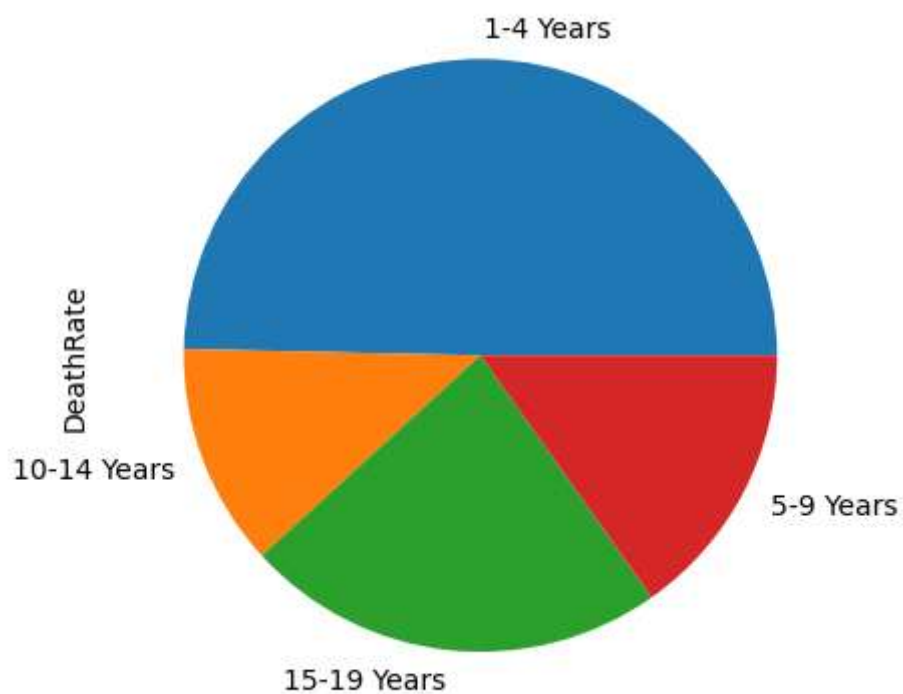
```
In [36]: data1w.plot.box()
```

```
Out[36]: <AxesSubplot:>
```



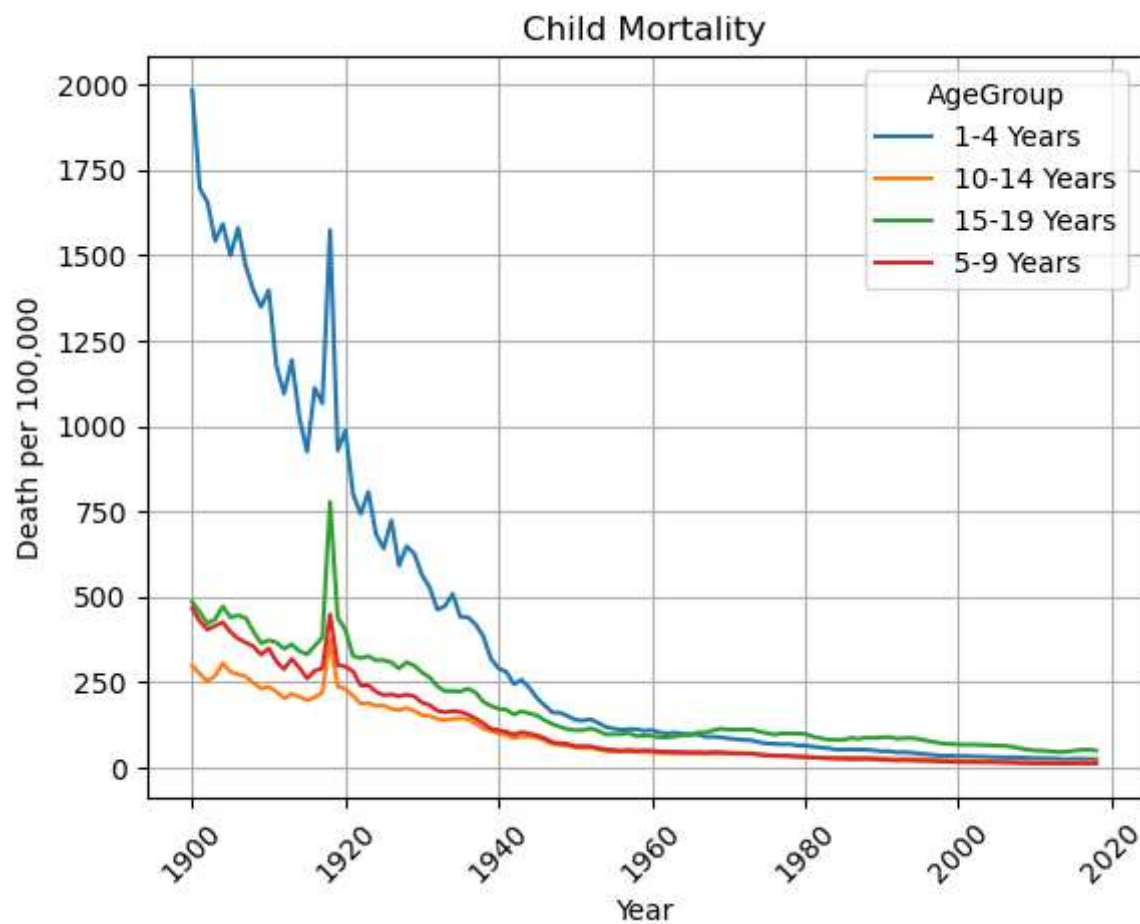
```
In [59]: data1.groupby('AgeGroup')['DeathRate'].sum().plot.pie()
```

```
Out[59]: <AxesSubplot:ylabel='DeathRate'>
```



```
In [56]: data1w.plot.line(title='Child Mortality', ylabel='Death per 100,000', grid=True, rot=45)
```

```
Out[56]: <AxesSubplot:title={'center':'Child Mortality'}, xlabel='Year', ylabel='Death per 100,000'>
```



```
In [ ]:
```