Start by thinking about a situation where there are five rather than eleven scientists.
Any pair of scientists cannot open the safe but any group of three can.

There are ${}^5C_2 = 10$ pairs of scientists, and for each pair of scientists there is a lock that they cannot open. If two pairs were unable to open the same lock then combining them would form a group of at least 3 scientists who cannot open the safe and that is against the rules. Therefore there must be at least 10 locks.

Call the scientists A, B, C, D and E. Associate each pair with a lock as shown in the table below and give all scientists not associated with a particular lock the key to it. It follows that each scientist receives ${}^4C_2 = 6$ keys, the number of pairs made up from the other 4.

| PAIRS | LOCKS | KEYS GIVEN | | | | |
|---|---|---|---|---|---|---|
| | | A | B | C | D | E |
| AB | 1 | | | ✓ | ✓ | ✓ |
| AC | 2 | | ✓ | | ✓ | ✓ |
| AD | 3 | | ✓ | ✓ | | ✓ |
| AE | 4 | | ✓ | ✓ | ✓ | |
| BC | 5 | ✓ | | | ✓ | ✓ |
| BD | 6 | ✓ | | ✓ | | ✓ |
| BE | 7 | ✓ | | ✓ | ✓ | |
| CD | 8 | ✓ | ✓ | | | ✓ |
| CE | 9 | ✓ | ✓ | | ✓ | |
| DE | 10 | ✓ | ✓ | ✓ | | |

For any pair of scientists there is one lock they cannot open.
For any lock there are only 2 scientists without the key and so any group of 3 scientists must be able to open each and every lock.

Similarly, with 11 scientists, any group of 5 scientists cannot open the safe but if any one of the remaining 6 joins them then together they can. Using reasoning like that above, ${}^{11}C_5 = 462$ locks are needed and each scientist receives ${}^{10}C_5 = 252$ keys.